Illicit Discharge Detection and Elimination Manual

Guidelines and Standard Operating Procedures

City of Maryville, TN

July 2016

Updated July 2024 by City of Maryville

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Preface and Acknowledgements

This updated manual of July 2024 was revised by City of Maryville staff and was originally prepared by Vaughn & Melton in conjunction with the City of Maryville dated December 5, 2011. This update replaces and supersedes the last revision dated July 2016.

The revisions reflect the current program as well as the new NPDES Phase II permit requirements. Forms and inspections are available in the City's MS4Front Permit Manager Software, and inspectors can complete these forms while on site using a tablet with an internet connection. The City's website has been updated to include an informational page on illicit discharges, spills, and pollution prevention.

As of this writing, there has not been any revisions on the City of Maryville's ordinance on stormwater discharges. Title 19 – Chapter 6 (Stormwater Discharges) Change 8 from April 1, 2008 is current, but a new ordinance will be in place with updates to meet the current NPDES permit requirements by September 2024.

The Center for Watershed Protection (CWP) has provided many useful guidance documents and manuals to assist local governments in the developing their respective stormwater management programs. This document has drawn considerably on those various guidance documents and in particular on the CWP document: Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments, October 2004. That document has served as primary guidance for many MS4 Phase II communities. The Maryville Stormwater Management Department would be well served by this reference document which provides an in-depth guidance on for the IDDE program.

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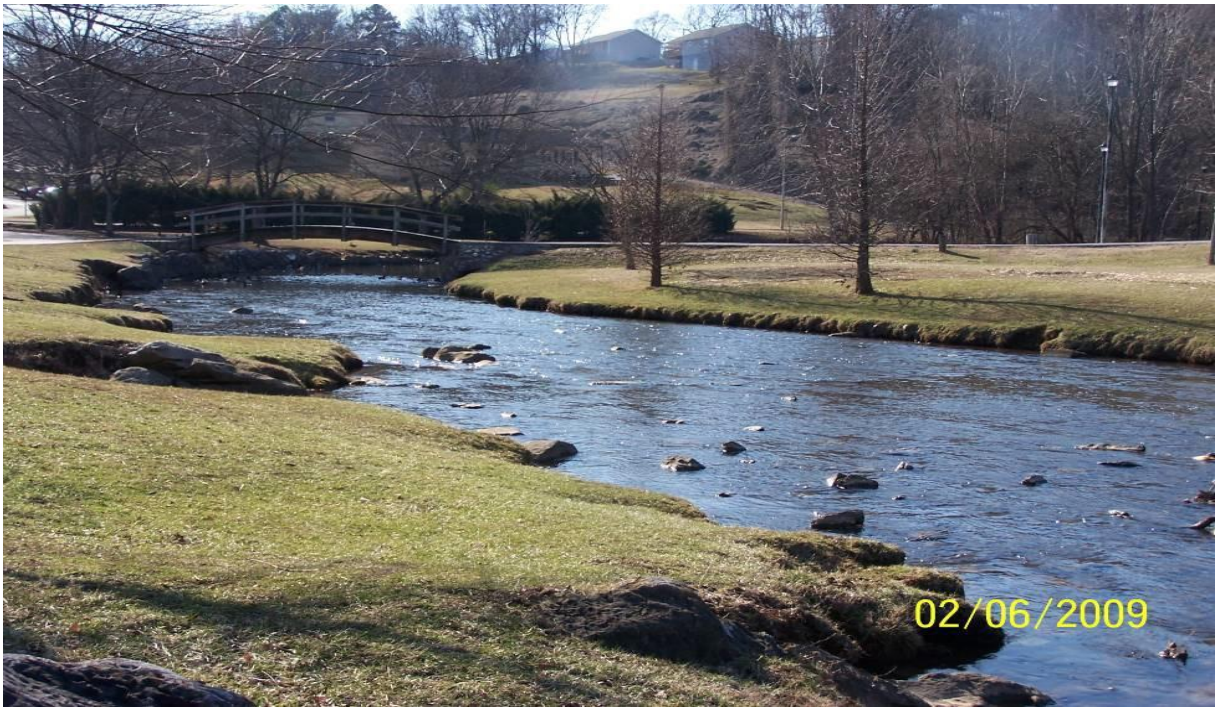

1. Introduction

This manual provides the City's Stormwater Program Manager and staff with guidance and procedures and tools necessary to maintain an effective IDDE program in accordance with the City's NPDES Phase II Stormwater Permit. Program Managers must have a good understanding of the types of illicit discharges that may be encountered and procedural tools to have an effective program. Their understanding of the system and the illicit discharges will be the cornerstone for training staff and informing political officials and residents the process of IDDE. An effective detection and elimination program addresses all types of illicit discharges.

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The City of Maryville has taken many steps already in their daily operations geared toward locating and eliminating illicit discharges. Maryville's stormwater maps are completed including the size and location of storm pipe, the number of outfalls, catch basins, detention ponds, hotspots, and inspections reports. This information resides on a separate GIS layer dedicated solely for stormwater infrastructure and its database. Please see maps of outfalls and hotspots in Appendix A.

1.1 Objectives

The specific objectives of this manual are to:

1. Provide a set of standards, operating procedures and guidance on stormwater management measures that will control and eliminate illicit discharges.

2. Implement effective and targeted practices with the long-term goal of consistent application throughout the city.
3. Promote behavior that will improve water quality and a healthy riparian ecosystem in the city of Maryville.

1.2 Content

The content of the manual is based primarily on select requirements of the Stormwater Phase II Program. The Phase II NPDES City of Maryville's Five-Year Plan addresses the following six minimum control measures:

1. Public Education and Outreach on Stormwater Impacts
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Stormwater Runoff Control
5. Permanent Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

This manual addresses components for the third minimum control measure, Illicit Discharge Detection and Elimination (IDDE). This manual was developed based on the specific needs of the City of Maryville. The IDDE program consists of the following components:

1. Identify and locate priority areas (hotspots) likely to have illicit discharges.
2. Map of the storm drain system.
3. Create and maintain an illicit discharge detection program.
4. Create and maintain procedures to trace the source of an illicit discharge.
5. Create and maintain procedures to remove a source.
6. Evaluate the IDDE program effectiveness.

1.3 Manual Audience and Organization

The manual addresses two distinct audiences: (1) Stormwater Program Manager who will direct the development of new programs, and (2) city and municipal employees, such as public works personnel, who will implement the programs on a day-to-day basis.

2. Scope and Purpose

2.1 Illicit Discharge Basics

2.1.1. What is an "Illicit Discharge"?

Federal regulations define an illicit discharge as "...any discharge to an MS4 that is not composed entirely of stormwater..." with some exceptions. These exceptions include discharges from NPDES- permitted industrial sources and discharges from fire-fighting activities. Illicit discharges are considered "illicit" because MS4s are not designed to accept, process, or discharge such non-stormwater wastes. An illicit discharge may not necessarily be harmful to the environment.

Sources of Illicit Discharges

- Sanitary wastewater
- Effluent from septic tanks
- Car wash wastewaters

- Improper oil disposal
- Radiator flushing disposal
- Laundry wastewaters
- Spills from roadway accidents
- Household toxics
- Any form of gray water

See Appendix B for more common stormwater pollutants, sources, and impacts.

2.1.2 Why Are IDDE Efforts Necessary?

Polluted stormwater runoff, including runoff from urban/suburban areas and construction sites, is a leading source of water quality impairment.

Discharges from municipalities such as the City of Maryville, often include wastes and wastewater from non- stormwater sources. These pollutant bearing discharges are not directly attributable to precipitation runoff. A significant portion of these dry weather flows are from illicit and/or inappropriate discharges.

Illicit discharges enter the system through either direct connection (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the stormwater from contaminated sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving water bodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

2.1.3 What is Required?

- Implement and enforce an IDDE program that includes the following:
    - A City of Maryville storm sewer system map, showing the location of system outfalls where the municipal storm sewer system discharges into waters of the state or conveyances owned or operated by another MS4. The map must also show the names and location of waters of the state that receive discharges from outfalls; inputs into the storm sewer collection system, such as inlets, catch basins, and drop structures; and the general direction of the stormwater flow.
    - Legal authority to prohibit illicit discharges and enforce those rules and codes to the extent allowable under Tennessee law.
- A plan to detect, identify, and eliminate non-stormwater discharges, including illegal disposal in the city.
- The education of public employees, businesses, and the general public about the hazards to water quality associated with illicit discharges and improper disposal of waste.
- Implementation of standards and standard operating procedures (SOP) to control and eliminate illicit discharges.

2.1.4 Does This Measure Need to Address All Discharges?

No. The IDDE program does not need to address the following categories of non-stormwater discharges or flows unless the Stormwater Program Manager of the City of Maryville identifies them as significant contributors of pollutants:

- Water line flushing

- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including sewer service connections and foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.)
- Uncontaminated pumped ground water
- Air conditioning condensate
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Street wash water
- Discharges or flows from firefighting activities

2.1.5 What Are Some Guidelines for Developing and Implementing This Measure?

The objective of the IDDE minimum control measure is to determine the types and sources of illicit discharges entering the system; and establish the legal, technical, and educational means needed to eliminate these discharges. To accomplish this objective, the City of Maryville's Stormwater Program Manager must implement certain tools and procedures.

The Map
The stormwater sewer system map provides a means of identifying and locating intake and discharge areas of the drainage system. The map is a tool used to determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular water bodies these flows may be affecting.

Legal Prohibition and Enforcement
City of Maryville's Revised Stormwater Ordinance that was adopted on April 1, 2008 gives the City the necessary authority to prohibit illicit discharges.

The Plan
The plan to detect and eliminate illicit discharges is the central component of this minimum control measure. The four general steps of this plan are:

1. **Locate Problem Areas**. The plan targets priority areas for detailed screening of the system based on the likelihood of illicit connections (e.g., areas with older sanitary sewer lines). Methods may include:

visual screening; water sampling from manholes and outfalls during dry weather; the use of infrared and thermal photography, cross-training field staff to detect illicit discharges, and public complaints.

2. **Find the Source**. Once a problem area or discharge is found, additional efforts may be necessary to determine the source of the problem. Methods include: dye-testing buildings in problem areas; dye- or smoke-testing buildings at the time of sale; tracing the discharge upstream in the storm sewer; employing a certification program that shows that buildings have been checked for illicit connections; implementing an inspection program of existing septic systems; and using video to inspect the storm sewers.

3. **Remove/Correct Illicit Connections**. Once the source is identified, the offending discharger is to be notified and directed to correct the problem. Education efforts and working with the discharger in resolving the problem are considered before taking legal action.

4. **Document Actions Taken.** Actions taken under the plan are documented. This provides evidence that progress is being made to eliminate illicit connections and discharges. Documented are included in annual reports and include information such as: the number of outfalls screened; any complaints received and corrected; the number of discharges and quantities of flow eliminated; and the number of dye or smoke tests conducted.

Educational Outreach

Public education and labeling of outfalls and other storm drain infrastructure is an important element of establishing a successful citizen hotline. Outreach to public employees, businesses, property owners, the general public, and elected officials regarding ways to detect and eliminate illicit discharges is an integral part of this minimum measure.

Maryville educational outreach efforts include:

- Informative brochures, and guidance for specific audiences (e.g., carpet cleaning and car wash businesses) and school curricula;
- A “hotline” to facilitate public reporting of illicit discharges;
- Coordinating volunteers for locating, and visually inspecting, outfalls or to stencil storm drains; and
- A recycling program and facilities for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

2.2. Maryville’s IDDE Regulations

The Maryville Stormwater Ordinances address the following items:

Title 19, Chapter 6, Stormwater Discharges Section

19-601. Purpose.
19-602. Rules applying to chapter.

19-603. Definitions.
19-604. Prohibitions.
19-605. Notification of spills and illicit discharges.
19-606. Requirements for monitoring.
19-607. Right of entry.
19-608. Notice of violation.
19-609. Penalties.

Specific ordinances are as follows:

19-601. Purpose. The purpose of the illicit discharge ordinance is as follows:

1. To safeguard the health, safety, and general welfare of the citizens
2. To prevent the pollution of streams, ponds, and other watercourses from illicit discharges
3. To preserve the natural beauty and aesthetics of the community
4. To enable the City of Maryville to comply with the NPDES General Permit for Discharges from small MS4s, TMDLs and other applicable state and federal regulations. (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008-15, March 2008)

19-602. Rules Applying to Chapter. For the purpose of this chapter, certain rules of construction shall apply herein as follows:

1. Words used in the present tense shall include the future tense and the singular includes the plural, unless otherwise indicated in the text.
2. The term "shall" or "must" is always mandatory and not discretionary. The words "may" and "should" are permissive in nature.
3. Except as herein provided, all words used in this chapter shall have their common dictionary definition (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008-15, March 2008).

19-603. Definitions. The following phrases as used in this section shall contain the following definitions:

1. "Illicit discharge." Any discharge to the stormwater system that is not composed entirely of stormwater and not specifically exempted in this chapter.
2. "Industrial waste." Liquid or other waste resulting from any process of industry, manufacturer, trade or business or from the development of any natural resources.
3. "Other wastes." Discarded brush, sawdust, shaving, leaves, lawn clippings, animal waste, used or previouslyapplied lime, garbage, trash, refuse, used newspaper, paper products, plastic containers or metal containers, ashes, offal, discarded tar, discarded paint, discarded or uncontained solvents, used, discarded or spilled petroleum products, antifreeze, motor vehicle fluids, used or discarded gas tanks or chemicals, or any other used, uncontained, unpackaged, or disposed of materials which may discharge to or otherwise enter the stormwater system.
4. "Person." Any individual, firm, corporation, partnership, association, organization or entity, includinggovernmental entities, or any combination thereof.
5. "Restaurant." An establishment or facility where food is prepared and sold.
6. "Runoff." The water resulting from precipitation that is not absorbed by the soil.
7. "Sanitary sewer." A system of underground conduits that collect and deliver sanitary wastewater to a wastewater treatment plant.

8. "Sanitary wastewater." Wastewater from toilets, sinks and other plumbing fixtures.

9. "Sewage." Human wastes carried by water from residences, buildings, industrial establishments or other places, together with such industrial wastes, stormwater or other water as may be present; or any substance discharged from a sanitary sewer collection system.

10. "Sinkhole." A naturally occurring depression where drainage collects in the earth's surface that is a minimum of 2 feet deep, or a hole, fissure or other opening in the ground, often underlain with limestone, dolomite or other rock formation that provides for and is being designated as a natural conduit for the passage of stormwater.

11. "Stormwater." Rainfall or ice melt that is not absorbed by the ground.

12. "Stormwater system." The system of roadside drainage, curbs and gutters, curb inlets, swales, catch basins, manholes, gutters, ditches, pipes, lakes, ponds, sinkholes, channels, creeks, streams, storm drains, and similar conveyances and facilities, both natural and manmade, located within the city which are designated or used for collecting, storing, or conveying stormwater, or through which stormwater is collected, stored or conveyed,whether owned or operated by the City of Maryville or any other person.

13. "Construction." Any placement, assembly, or installation of facilities or equipment (including contractual obligations to purchase such facilities or equipment) at the premises where such equipment will be used, including preparation work at such premises.

14. "Pollutant hotspot." An area where the land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008-15, March 2008)

19-604. Prohibitions.

1. No person shall:

   a. Connect or allow to be connected any sanitary sewer to the stormwater system, including any sanitary sewer connected to the stormwater system as of the date of adoption of this chapter, or

   b. Cause or allow an illicit discharge to the stormwater system, or any component thereof, or onto driveways, sidewalks, streets, parking lots, sinkholes, creek banks, or other areas draining to the stormwater system. Illicit discharges include, but are not limited to:
      - Sewage discharges except as deemed unavoidable due to collection system operation maintenance and extreme weather events;
      - Discharges of wash water from mobile operations such as mobile automobile washing, steam cleaning, power washing, or carpet cleaning;
      - Discharges of pool or fountain water containing chlorine, biocides, or other chemicals at the point of entry of an enclosed stormwater system or stream, or discharges of pool or fountain filter backwash water;
      - Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility including motor vehicles, cement-related equipment, or port-a-potty servicing;
      - Discharges of wash water from the cleaning or hosing of impervious surfaces in industrial and commercial areas, including parking lots, streets, sidewalks, driveways, patios, plazas, work yards, or outdoor eating or drinking areas;
      - Discharges of heated water from commercial or industrial operations;
      - Discharges of dyes without proper permission;
      - Discharges of laundry waste water;
      - Known discharges from leaking water or sewer lines remaining uncorrected for 7 days;
      - Discharges or discarding of animal fecal waste or dead animals;

- Discarding of vehicles equipment or vehicle parts;
- Discarding lawn clippings, leaves, or branches;
- Discarding trash or debris into containers or areas not intended for the purpose of trash/debris disposal;
- Discarding or applying herbicides, pesticides, fertilizers, or other chemicals;
- Discharges of runoff from materials storage areas where chemicals, fuels, grease, oils, or other hazardous materials are stored;
- Discharges from the following land uses, areas or activities that are identified herein as pollutant hotspots:
  - Vehicle, truck or equipment maintenance, fueling, washing or storage areas including but not limited to: gas stations, automotive dealerships, automotive repair shops, and car wash facilities;
  - Any property containing more than 400 parking spaces, or 120,000 square feet of impervious area;
  - Recycling and/or salvage yard facilities;
  - Restaurants, grocery stores and other food service facilities;
  - Commercial facilities with outside animal housing areas, including animal shelters, fish hatcheries, kennels, livestock stables, veterinary clinics, or zoos;
  - Construction areas;
  - Other producers of pollutants identified by the director of engineering and public works or his/her designee by information provided to or collected by him/her or his/her representatives, or reasonably deduced or estimated by him/her or his/her representatives from engineering or scientific study.

2. Subject to the provisions of subsection (3), the following discharges shall not be in violation of this chapter:

   a. Water line flushing;
   b. Landscape irrigation;
   c. Diverted stream flows or rising groundwater;
   d. Infiltration of uncontaminated groundwater (as defined by federal regulations) to separate storm drains;
   e. Pumping of uncontaminated groundwater;
   f. Discharges from potable water sources, foundation drains, uncontaminated air conditioning condensation, irrigation waters, springs, water from crawl space pumps, or footing drains;
   g. Lawn watering;
   h. Individual noncommercial car washing on residential properties; or car washing of less than 2 consecutive days in duration for a charity, nonprofit fund raising, or similar noncommercial purpose;
   i. Flows from riparian habitats and wetlands;
   j. De-chlorinated swimming pool discharges;
   k. Incidental street wash water from street cleaning equipment designed for cleaning paved surfaces and limiting waste discharges;
   l. Street deicing for public safety;
   m. Any activity authorized by a valid NPDES permit; and
   n. Any flows resulting from firefighting

3. If the director of engineering and public works or his/her designee finds that any of the activities listed in subsection (2) above are found to cause or may cause sewage or industrial wastes or other wastes to be discharged into the stormwater system, the director of engineering and public works or his/her designee shall notify the person performing such activity and shall order that such activities be stopped or conducted in such manner as to avoid improper discharge into the stormwater system. Failure to comply with such order shall be a violation of this section. (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008-15, March 2008).

19-605. Notification of Spills and Illicit Discharges. As soon as any person has knowledge of any illicit discharge to the stormwater system in violation of this chapter, such person shall immediately notify the City of Maryville Stormwater Department by telephone of the discharge. If such person is directly or indirectly responsible for such discharge or responsible for the operation of the system involved in such discharge, then such person shall also take immediate action to ensure the containment and clean-up

of such discharge and shall confirm such telephone notification with a written report to the stormwater department within 3 calendar days. At a minimum, the written report for any illicit discharge shall include:

1. Date and time of discharge;
2. Location of the discharge;
3. Material or substance discharged;
4. Duration and rate of flow;
5. Total volume discharged;
6. Total volume recovered;
7. Cause or reason of the discharge;
8. Remediation or containment action taken;
9. Material Safety Data Sheets (MSDS) for the discharged material;
10. Action taken to prevent further discharges
11. Description of any environmental impact (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008- 15, March 2008).

19-606. Requirements for Monitoring. The stormwater department may require any person engaging in any activity or owning any property, building or facility (including but not limited to at site of industrial activity) to undertake such reasonable monitoring of any discharge(s) to the stormwater system and to furnish periodic detailed reports of discharges and/or illicit discharges (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008-15, March 2008).

19-607. Right of Entry. The director of engineering and public works or his/her designee may enter upon the property which discharges or contributes, or is believed to discharge or contribute, to stormwater runoff or to the stormwater system stream or natural drainage way during all reasonable hours to monitor, to remove foreign objects or blockages, or to inspect for compliance with the provisions of this chapter (as added by Ord. #2005-26, July 2005, and replaced by Ord. #2008-15, March 2008).

19-608. Notice of Violation. Whenever the director of engineering and public works or his/her designee determines that a violation of any provision of this section has occurred, the director of engineering and public works or his/her designee may issue a notice of violation to the property owner, utility, facility operator, lessee, contractor, permittee or equipment operator of the site of the discharge. The notice of violation shall:

1. Be in writing;
2. Include a description of the property sufficient for identification of where violation has occurred;
3. List the violation;
4. State the action required;
5. Provide a deadline for compliance or to stop work (as added by Ord. #2008-15, March 2008).

19-609. Penalties.

1. Any person violating the provisions of his section shall be guilty of a misdemeanor and punished as provided in the general penalty clause of the city code. Each day of a continuing violation of this chapter shall constitute a separate offense.

2. Any person violating the provisions of this chapter may further be assessed by the director of engineering and public works or his/her designee a civil penalty of not less than fifty dollars ($50.00) or more than five thousand dollars ($5,000.00) per day for each violation. Each day of violation shall constitute a separate offense.

3. In assessing a civil penalty, the municipality may consider:

   a. The harm done to the public health or the environment;

   b. Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;

   c. The economic benefit gained by the violator;

   d. The amount of effort put forth by the violator to remedy this violation;

   e. Any unusual or extraordinary enforcement costs incurred by the municipality;
   f. The amount of penalty established by ordinance or resolution for specific categories of violations, if any; and

   g. The equities of the situation that outweigh the benefit of imposing any penalty or damage assessment.

4. In addition to the civil penalty set forth in subsection (2) above, the city may recover all damages proximately caused by the violator to the municipality, including, but not limited to, reasonable expenses incurred in investigating violations and enforcing violations of this chapter.

5. The City may bring legal action to enjoin the continuing violation of this chapter, and the existence of any other remedy, at law or in equity, shall be no defense to such actions.
6. The remedies set forth in this section shall be cumulative, not exclusive, and it shall not be a defense to any action, civil or criminal, that one (1) or more of the remedies set forth herein has been sought or granted.
7. Any civil penalty assessed by the City may be appealed to Blount County Circuit Court. (as added by Ord. #2008-15, March 2008.

3. Staff Roles and Responsibilities

Public education and municipal training to educate employees across departments and agencies are the primary areas where this program component is integrated with other community-wide initiatives. The website and stormwater email is used to report other watershed and water quality problems (e.g., erosion and sediment control, dumping, sanitary sewer overflows). Coordination also occurs between tracking repair costs and determining appropriate fine levels for enforcement purposes.

3.1 Responsible Department/Agency

For the City of Maryville, the Stormwater Department is the responsible department for all Stormwater related issues. Their responsibility includes the program's budget management, inspections, detections, enforcements, and public education.

3.2 Provisions for Access and Inspection

As indicated in section 19-607 Right of Entry of the City's ordinance, a right of entry is granted to access private property for inspections when needed to inspect illicit discharges. The ordinance also specifies that right of entry applies to all land uses in the community, and that proof of discharge is not required to obtain entry. It also states the responsibility of the property owner to disarm security systems and remove obstructions to safe and easy access.

3.3 Enforcement Tools

Section 19-608. Notice of Violation (NOV) of the Stormwater Ordinance defines a range of enforcement tools so the responsible department can effectively handle the wide range of illicit discharge violations it is likely to encounter. Section 19-609. Penalties of the Stormwater Ordinance lists a variety of penalties the City of Maryville have developed to support the entire IDDE program, including enforcement.

3.4 Tracking and Reporting System

In response to the requirements of the NPDES Permit for small MS4s, Maryville has a reporting system in place that allows the public to report suspected illicit discharges. A hotline number (865-273-3512) for reporting illegal dumping into storm drains is posted on the City of Maryville website, and citizens can also email the Stormwater Program Manager directly. An online database contains the City's inspection reports as well as records of violations, and provides important historical documentation of problems and corrective actions.

3.5 Response Team

Illicit discharges, hazardous or non-hazardous, are controlled to protect water quality, as well as worker and public safety. Depending on the circumstances of the illicit discharge, the City of Maryville has the response communication capabilities to coordinate with TDEC and the Health Department, if needed, as well as other cities

and counties in the region, and state or federal agencies, as appropriate, to best determine the cleanup approach and level of action required. The City's Stormwater Program Manager will engage a response team which will be trained in sampling and identification of illicit discharges.

For non-hazardous discharges, the City's response team will make an effort to identify the discharge and provide remedial support. The City will work with municipalities, industries, or businesses that discharge to resolve the illicit discharge.

When a hazardous material illicit discharge is suspected or known, the first call is to the 911 call center where the call and information is properly routed. The 911 call center is also directed to call the City Stormwater Program Manager or his designee. The Stormwater Program Manager will coordinate further action levels with other entities such as local HAZMAT team and the National Response Center.

4. Basic Inspections Information

4.1 Priority Areas

The City of Maryville has performed an initial screening of all outfalls, and a map identifying all outfalls and receiving waters of its storm sewer system has been completed. The City has identified priority areas, primarily 'hotspots", and continues with a program of scheduled inspections. The City program also continues to inspect and investigate possible new priority areas by monitoring or checking:

- Zoning maps – Industrial areas with high density development that may have a high illicit discharge potential.
- Locations of previous illicit discharges – Areas with historical illicit discharge reports or previous citizen complaints.
- Areas with a high density of outfalls.
- Older areas of the community that were put on public sewer.
- Areas that may be on septic systems
- Water quality information

4.2 Safety

If hazardous materials are found, they are to be handled with all proper procedures in accordance with that specific material. Hazardous materials are any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

4.3 What to Look For

There are some tracing techniques to use while tracing illicit discharges. Each has advantages and limitations. The City's program makes use of the appropriate technique.

4.3.1 Visual Inspections

Visual Inspection at manholes/catch basins: This tracing technique is typically used when there is no suspected source site. It is the most cost effective and efficient method of tracing. Structures are systematically inspected starting at the initial detection location, gradually working upstream through the system. If the crew is tracking a continuous discharge, the inspections may be relatively easy, and the flow can be traced back to its source.

If the crew is attempting to track a transitory or intermittent discharge, the crew is instructed to make the following observations depending on the information provided from the initial identification.

- color and clarity of any discharge
- staining or deposits on bottom of structure
- oil sheen, scum, or foam on any standing fluids in sump of structure
- odors, staining or deposits on inlet pipes and outlet pipes

4.3.2 Sampling/Parameters

Sampling flowing discharges: Samples may be collected in the event a discharge is flowing through the outfall. Stagnant pools of water or sump water are not to be sampled. Samples are to be collected when the discharge is initially found and after any source is removed. The sample collected after removing an illicit discharge can indicate if other illicit discharges are present.

Standard operating procedures (SOP) and forms are provided in Appendix C for recording and documenting illicit discharges. These cover City inspections, as well as citizen complaints and call-in alerts. The “Dry Weather Outfall Inspection Form” provides for a quick qualitative assessment and may be supplemented with a quantitative analysis of the collected sample. While the sample may be taken to a laboratory for analysis, the sample may also be field analyzed with the use of an appropriate field test kit for quick assessment of indicator pollutant parameters to facilitate identification of the discharge source. This may be particularly useful in cases where the discharge is intermittent and may be traced to the source.

Dry Weather Discharge is defined as a 72-hour period with less than 1/10 inch of rainfall.

The City of Maryville has available a water-quality meter manufactured by Yellow Springs International (YSI), (www.ysihydrodata.com) that is used to analyze samples in the field for pH, dissolved oxygen, temperature, conductivity, and turbidity. In addition, the City utilizes field test kits manufactured by Hach Company (www.hach.com) to test stormwater and streams for pH, chlorine, copper, phenols, detergents, ammonia, nitrate, dissolved oxygen, and phosphate. The use of these kits facilitates a rapid analysis of typical pollutants found in stormwater and the forensic tool to determine the potential source. Instructions provided with the YSI meter and the Hach test kits should be followed. While sewage flows can at times be detected by odor, testing for fecals will require analysis in the laboratory of the collected and refrigerated sample. Specific protocol and procedures are to be provided by the laboratory of choice.

4.3.3 Recording Data

Tracking illicit discharges is a vital component of the IDDE program. The City of Maryville has implemented a tracking database system (MS4Front) where a database history for most illicit discharges has been documented and will continue to be populated.

This tracking program will facilitate evaluation of the overall IDDE program and will expedite annual reporting. It also addresses illicit discharge and maintenance issues resulting from the following:

- Citizen complaints
- Opportunistic inspections
- Regular longer-term inspections
- Removal actions taken for illicit discharges

4.4 Discharge Procedures

4.4.1 Tracing Illicit Discharges

Once an illicit discharge has been reported or detected through an inspection, the next step is to locate the source. Selection of tracing techniques depends on the type of illicit discharge detected, the information collected during initial discovery and observation (whether through a routine inspection or through a citizen call-in). There are two categories of potential illicit discharges: (1) transitory or intermittent discharges (where upon returning to the site, no flow is present at the location where the illicit discharge was initially reported), and continuous discharges (where upon returning to the site a continuous flow is present and the flow may be more easily traced to its source). Each of these circumstances is described below.

A key tracing technique is to follow dry weather flows upstream along the conveyance system to bracket the location of the source of discharge.

1. **Transitory or intermittent discharges**: These conditions may occur as a result of an inspection or a citizen complaint. While initial information may have been collected regarding the potential illicit discharge a return trip may show that the discharge was either intermittent or transitory (e.g., no flow is present upon return to the site. The investigative techniques that should be used will depend on whether or not a potential source location was identified during the initial observation:

    a. Potential source identified - If a potential source for the illicit discharge was initially identified, steps should be taken to investigate the potential source site, such as inspecting the site and storm drain system in the vicinity of the site. If floor drains, sumps, or other suspect discharge locations are observed during this inspection, dye testing, smoke testing, electronic location of subsurface pipes, or televising may be used. These techniques should show whether the suspect site was the source of the illicit discharge.

    b. Potential source not identified - If no source site is suspected, and only the general area of the illicit discharge is known, it may be possible to trace the evidence of the illicit discharge by visual inspection of the storm drain access points. If this catch basin/manhole inspection technique is not fruitful, some interim steps could be taken to try to trap water from an intermittent discharge. For example, sand bagging, damming or block testing of selected storm drain access points, combined with installation of an optical brightener trap to assess if detergents are present in a discharge, and may reveal the source of the discharge. If these techniques have no positive result (no water pools behind the weir or sand bag), the discharge was likely transitory (one time only), and it may not be possible to determine its origin. In this case, the location of the originally reported illicit discharge should be added to a regular inspection program to provide for the possibility of future incidents. If the original report of the illicit discharge was severe or gross pollution, then smoke testing or televising of the storm drain system may be warranted.

2. **Continuous discharges**: Tracing continuous discharges is typically more fruitful than tracing transitory or intermittent discharges. The primary difference between tracing a transitory or intermittent discharge and tracing a continuous discharge is that sandbagging and weirs are not required for a continuous discharge. Visual observation of the system access points should reveal where the flow is coming from. Just as for tracing a transitory or intermittent discharge, if visual inspections are not fruitful in identifying the source and the original report was severe or gross pollution, then televising, smoke testing, or sample collection may be warranted. If fecal

pollutants are suspected then the inspector should collect a grab sample (according to proper lab protocol) for bacterial analysis from any pipe with a significant flow, even if the discharge appears to be clear.

Isolation

Depending on what the crew is looking for, and what they find, they may progressively inspect additional structures until either a potential source is found, or no further evidence is found. If no further evidence is found the crew may elect to further assess some of the structures by installing sandbags or other damming devices to determine if the discharge recurs. Crews should use standard safety procedures when conducting these inspections such as cone placement and safety vests in traffic areas, confined space entry techniques (if entry is necessary), steel-toed boots, etc.

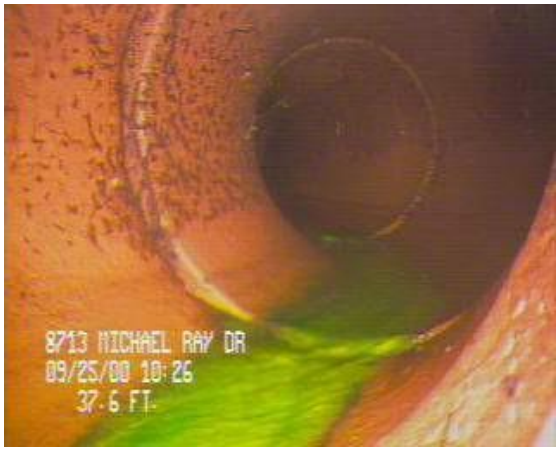
Sandbagging or Dam Sandbagging

Sandbagging and damming is typically only conducted when the discharge flow has ceased since initial detection. Application of this technique will show whether the discharge is one time only (no water pools behind the sandbag or dam) or intermittent (water pools behind the sandbag). This technique involves placement of sandbags or similar barriers such as caulk dams within strategic manholes in the storm drain network to form a temporary dam that collects any intermittent flows that may occur. Any flow collected behind the sandbag is then assessed using visual observations or by indicator sampling. Sandbags are lowered on a rope through the manhole to form a dam along the bottom of the storm drain, taking care not to fully block the pipe (in case it rains before the sandbag is retrieved). Sandbags are typically installed at junctions in the network to eliminate contributing branches from further consideration. If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of the intermittent discharge. Sandbags are typically left in place for no more than 48 hours, and should only be installed when dry weather is forecasted. Sandbags should not be left in place during a heavy rainstorm. They may cause a blockage in the storm drain, or, they may be washed downstream and lost. The biggest downside to sandbagging and damming is that it requires at least two trips to each manhole. Note: This method is not routine is used only after other methods have been exhausted.

Optical Brightener Monitoring Traps

Optical brightener monitoring (OBM) traps can be used to trace intermittent or transitory discharges that result from wash water with detergent. Detergents usually contain optical brighteners that can be detected at high concentrations using this method. However, the traps only detect highly concentrated discharges. The detergent concentration required to be detected by the light is approximately the same as pure wash water from a washing machine. Consequently, OBM traps may be best suited as a simple indicator of the presence or absence of intermittent flow or to detect the most concentrated flows. The traps can be made using easily acquired materials. The traps contain an absorbent, unbleached cotton pad or fabric swatch contained inside a wire mesh trap or section of small diameter (e.g., 2-inch) polyvinyl chloride (PVC) pipe.

The traps should be anchored to the inside of an outfall at the invert using wire or monofilament that is secured to the pipe itself. Rocks or bricks with holes can be used as temporary weights to hold the trap in place. Field crews can retrieve the OBM traps after 24 to 72 hours of dry weather. OBM traps need to be retrieved before coming into contact with stormwater, which will contaminate the trap or wash it away. When placed under a long wave fluorescent ultraviolet or “black” light, an OBM trap will indicate if it has been exposed to detergents.



Dye Testing

Dye testing is typically conducted when a potential source site has been identified, and the crew is trying to determine whether the site has floor drains or other locations that connect and discharge to the storm drain system. Permission to access the site must be obtained before dye testing can be conducted. Verbal or written requests are both acceptable. The crew should review available sanitary sewer and storm drain maps before conducting the dye testing.

The dye testing procedure consists of two steps:

- Discharging the dye into the suspect location, and
- Opening nearby storm drain and sanitary sewer manhole covers to determine where the dye discharges to.

This procedure is fairly effective for confirming direct connections into the storm drain system for short reaches. If a longer pipe network is being evaluated, charcoal packets can be left in selected structures and later collected and analyzed for the presence of the dye. If dye testing porcelain structures, tablets or charcoal should be wrapped in tissue before depositing. When dye testing, the crew should keep in mind that each structure (sink, toilet, etc.) should be tested separately. Many times a single utility in a basement may be incorrectly connected to a storm drain line instead of a sanitary line.

Televising

Televised video inspections are a useful technique when an illicit connection or infiltration from a nearby sanitary sewer is suspected, but little evidence of the illicit discharge remains behind. Two types of video cameras are available for use:

- A small camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or
- A larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.

Typically the operator of the camera has access to a keyboard or audio voice-over to record significant findings on the videotape that is produced for future review and evaluation.

Smoke Testing

Smoke testing is a useful technique for tracing intermittent discharges or continuous discharges that have no apparent source site. Smoke is introduced into the storm drain system and emerges at locations that are connected to the system. Smoke testing works best for short reaches of pipe, or in situations where pipe diameters are too small for video testing. Note the following when planning and executing smoke testing:

- Notify the public about the date and purpose of smoke testing before starting is critical.
- The smoke used is non-toxic, but can cause respiratory irritation, which can be a problem for some residents.
- Residents should be notified in advance of testing, and should be provided the following information:
    - Date testing will occur
    - Reason for smoke testing
    - Precautions they can take to prevent smoke from entering their homes or businesses
    - What they need to do if smoke enters their home or business, and any health concerns associated with the smoke
    - A telephone number residents can call to relay any particular health concerns (e.g., chronic respiratory problems)

City's Stormwater Program Manager may also notify local media to get the word out if extensive smoketesting is planned (e.g., television, newspaper, and radio). On the actual day of testing, local firedepartments and 911 call centers should be notified to handle any calls from the public. The basicequipment needed for smoke testing includes manhole safety equipment, a smoke source, smoke blower, and sewer plugs.

The preferred smoke source is smoke "bomb," or "candle" that burns at a controlled rate and releases very white smoke visible at relatively low concentrations. Smoke bombs are suspended beneath a blower in amanhole. Candles are available in 30 second to 3-minute sizes. Once opened, smoke bombs should bekept in a dry location and should be used within 1 year.

Smoke blowers provide a high volume of air that forces smoke through the storm drainpipe. Two types ofblowers are commonly used: "squirrel cage" blowers and direct-drive propeller blowers. Squirrel cageblowers are large and may weigh more than 100 pounds but allow the operator to generate more controlled smoke output.

Direct-drive propeller blowers are considerably lighter and more compact, which allows for easier transportand positioning. Three basic steps are involved in smoke testing. First, the storm drain is sealed off by plugging storm drain inlets. Next, the smoke is released and forced by the blower through the storm drainsystem. Lastly, the crew investigates if any smoke escapes above-ground to find potential leaks. Septicvents on rooftops are clear indicators of cross connections to the storm drain system.

4.4.2 Removal

One of three methods can be used to seal off the storm drain:

- Sandbags can be lowered into place with a rope from the street surface.

- Beach balls that have a diameter slightly larger than the drain can be inserted into the pipe. The beach ball is then placed in a mesh bag with a rope attached to it so it can be secured and retrieved. If the beach ball gets stuck in the pipe, it can simply be punctured, deflated and removed.

- Expandable plugs may be inserted from the ground surface. Blowers should be set up next to the open manhole after the smoke is started. Only one manhole is tested at a time. When a smoke candle is used, crews simply light the candle, place it in a bucket, and lower it in the manhole The crew then watches to see where smoke escapes from the pipe. The two most common situations that indicate an illicit discharge are when smoke is seen rising from internal plumbing fixtures (typically reported by residents) or from sewer vents. Sewer vents extend upward from the sewer lateral to release gas buildup, and are not supposed to be connected to the storm drain system

- *Transitory illicit discharges*

The best method to reduce transitory discharges is through general public education, education of municipal response personnel, tracking of discharge locations, and enforcement of an illicit discharge ordinance.

- *Intermittent illicit discharges*

These types of discharges are more likely to be discovered, and are less difficult to trace and remove, but can still present significant challenges. These discharges can have large or small impacts on water bodies depending on pollutant content and the size of the receiving water body.

- *Continuous illicit discharges*

Continuous illicit discharges are usually easiest to trace and can have the greatest pollutant load.

4.4.3 Records Keeping and Enforcement

Tracking illicit discharges is a vital component to any IDDE program. The City of Maryville has implemented a tracking database system (MS4Front) where a database history for most illicit discharges has been documented and will continue to be populated. This database will help Maryville better understand the origins of illicit discharges and identify maintenance issues for the storm drain system structures. This tracking program will also facilitate evaluation of the overall IDDE program and will expedite annual reporting. It will also address illicit discharge and maintenance issues resulting from the following:

- Citizen complaints or “hotline” call ins.
- Opportunistic inspections
- Regular scheduled inspections
- Removal actions taken for illicit discharges

5. Outfalls

5.1 Mapping Locations

Appendix A contains hard copy maps of the Stormwater Area for the City of Maryville. These maps depict the outfalls in the system as well as the known hotspots in the City. These maps are on designated Stormwater GIS layer where all related database are available. The City maintains an outfall inspection program as part of the IDDE program.

5.2 Inspection

Illicit discharges can be detected in many ways. Determining which detection methods are appropriate can be a relatively simple process.

5.2.1 Dry Weather Inspections

The City of Maryville has completed mapping all the outfalls in its jurisdiction. During mapping and initial inspections, dry weather inspections were conducted. The IDDE Outfall Inspection form in Appendix C may be used to detect continuous and intermittent discharges. The form should be completed whenever evidence of an illicit discharge, such as significant flow during dry weather, the presence of raw sewage indicators, staining, or residue, is observed. The form should be completed even if there is no evidence of an illicit discharge so that a record of the inspection is documented.

5.2.2 Long-Term Dry Weather Inspections

Long-term, regular inspections of outfalls are a primary part of the IDDE program. Regular inspections will not be significantly different from inspections conducted during mapping. The IDDE Outfall Inspection Form can be used, and the major difference will be that a crew or inspector will have historical data to work with to make assessments. These inspections should be done annually during the dry season (August-October) and can be recorded in an electronic database or paper forms can be kept.

5.2.3 Opportunistic Inspections

Most public works crews conduct their regular duties in and around the storm drain system. The City's Stormwater Program Manager may elect to have crews conduct outfall inspections on a formal basis (actually bringing an inspection form and equipment) while performing other work, or the Stormwater Program Manager may elect to have crews informally "keep a look out" for illicit discharges. If an employee observes evidence of an illicit discharge during an informal or non-routine inspection, he/she should collect as much information about the potential illicit discharge as possible then contact his/her supervisor or dispatch office so that appropriate action can be taken. The Incident Tracking Form (located in Appendix C) can be used to collect the information observed.

While it may not be reasonable to expect all public works employees to have copies of the form at all times, there are other ways to collect the information:

- The person observing the discharge can provide the information verbally to dispatch or the supervisor, who can then complete the Incident Tracking Form
- The person can log as much information as they can recall onto the form upon returning to the office
- A third party (such as a stormwater inspector) dedicated to inspecting and tracing illicit discharges can be sent to the location as soon as possible where the potential illicit discharge was observed to collect the necessary information directly on the form.

It is important to collect as much information as possible including digital photos at the time of initial observation because of the likelihood that a discharge may be transitory or intermittent. Initial identification of the likely or potential sources of the discharge is also very important.

5.2.4 Citizen Call-In Inspections

A citizen call-in program can also serve to identify illicit discharges. To report illegal dumping into storm drains and other illicit discharge violations, the City of Maryville maintains a citizen comment or complaint line (865-273-3512) posted on the City's website. Citizens can also call the Customer Service Desk of the Municipal Center (865-273-3456) during normal business hours. Complaints can also be reported through the Stormwater Department's email also posted on the website.

Dispatch personnel are first instructed to determine if the incident involves a potential hazardous substance and to forward such calls to 911 and then call the Stormwater Program Manager. Dispatch personnel are instructed to collect as much information as possible at the time of the report, and to fill out an Illicit Discharge Incident Tracking Form.

5.2.5 Septic System Inspections

The Stormwater Program Manager will review his/her community prioritization and determine if any areas might need septic system inspections. If the Stormwater Program Manager determines there are areas that may have high risk of failed septic systems discharging to the storm drain system, then a screening program for the area will be initiated.

Indicators of septic system failures include wet areas on the ground or disagreeable odors near the leach field. If municipal personnel observe these indicators near a leach field, they should coordinate with their local health officer to initiate enforcement, to have the owner repair the septic system (or connect to a sanitary sewer).

5.3 Frequencies and Schedules

The City of Maryville has complied with the TDEC Division of Water Pollution Control's requirement of identifying and inspecting all outfalls during the permit cycle. All of the 246 outfalls identified have been screened for dry weather discharges in Permit Year 2. Inspections are performed as issues are found during regularly scheduled inspections of priority areas or hotspots (ref: Section 6), as complaints are received (ref: Section 5.2.4), or as part of opportunistic inspections (ref: Section 5.2.3).

5.4 Documentation

The NPDES Phase II Permit requires the City to keep records of all stormwater program activities. Proper documentation of past complaints, problems, and inspections can help focus an investigation in the right direction or identify repeat offenders. This information is available in the City's online database.

5.4.1 Form or Checklist

All forms and checklists that are used for outfall and incident inspections are included in Appendix C.

5.4.2 Entry into Tracking Database

Adding inspection reports to the tracking database is vital to the Maryville's IDDE program. The City of Maryville has implemented a tracking database system (MS4Front) where a database history for most illicit discharges has been documented and will continue to be populated. The software has mobile inspection capabilities that allows an inspector to complete an inspection form during his fieldwork and enter the information directly onto the database while on site. This eliminates the need to transcribe paper forms into the database. All existing databases of outfalls, permits, and structural SCMs have been exported to this database as well. The tracking database can create summary reports and expedite annual reporting.

5.4.3 GIS Link

The City's MS4Front database includes the fields of the inspection report Work Order Form(s). This database can create and edit GIS data or can be easily linked to the existing GIS software. Linking to a GIS allows mapping of illicit discharge locations, citizen complaint locations, and many other IDDE issues which can assist greatly in the overall program.

6. Hotspots

The Center for Watershed Protection defines stormwater hotspots as commercial, industrial, institutional, municipal, or transport-related operations that produce higher levels of storm water pollutants, and/or present a higher potential risk for spills, leaks, or illicit discharges. Outfalls serving priority areas containing hotspots are screened on an annual basis.

The City of Maryville has completed the first annual inspection report and identified all the Hotspots in its jurisdiction. A list of hotspots as well as a map that illustrates a general location of the hotspots are included in Appendix A. A more detailed and up to date list of hotspots can be found in the City's GIS and MS4Front database.

A Hotspot Site Investigation Form, available in Appendix C, is used by inspectors to assess the condition of the hotspot and determine if immediate enforcement, follow-up onsite inspection, or testing for illicit discharge is needed. The form allows the inspector to evaluate the site's vehicle/equipment operations, outdoor materials, waste management, physical plant, turf / landscaping area, and stormwater infrastructure, and indicate potential pollution sources.

6.1 Types and Locations

Hot spots for illicit discharges are often categorized according to frequency, which provides information about the source and helps determine which tracing techniques may be useful in locating the discharge. The following three categories provide a good basis for defining illicit discharges:

- Transitory illicit discharges are typically one-time events resulting from spills, breaks, dumping, or accidents. Transitory illicit discharges are often reported to an authority through a citizen complaint line or following observation by a municipal employee during regular duties. Because they are not recurring, they are the most difficult to identify, trace, and remove.

- Intermittent illicit discharges occur occasionally over a period of time (several hours per day, or a few days per year). Intermittent discharges can result from legal connections to the storm drain system, such as a legal sump pump connection that is illegally discharging anything other than groundwater. Intermittent discharges can also result from activities such as drum washing in exterior areas.

- Continuous illicit discharges are typically the result of a direct connection from a sanitary sewer, overflow from a malfunctioning septic system, inflow from a nearby subsurface sanitary sewer that is malfunctioning, or an illegal connection from a commercial or industrial facility.

It is also important to consider land use when looking for illicit discharges. Table 1 provides a list of conditions and activities that may produce transitory and intermittent discharges, along with associated sources and land use. Table 1 lists possible sources of continuous discharges and their associated land use.

Table 1.Land Use, Source Locations, and Conditions or Activity that Produces Discharge

Land Use	Generating Site	Activity that Produces Discharge
Residential	• Apartments • Multi-family • Single family detached	• Car washing • Driveway cleaning • Dumping/spills (e.g., leaf litter and RV/boat holding tank effluent) • Equipment wash-downs • Septic system maintenance • Swimming pool discharges
Commercial	• Campgrounds/RV parks • Car dealers/rental car companies • Car washes • Commercial laundry/dry cleaning • Gas stations/auto repair shops • Nurseries and garden centers • Oil change shops • Restaurants • Swimming pools	• Building maintenance (power washing) • Dumping/spills • Landscaping/grounds care • Outdoor fluid storage • Parking lot maintenance (power washing) • Vehicle fueling • Vehicle maintenance/repair • Vehicle washing • Wash-down of greasy equipment and grease traps
Industrial	• Auto recyclers • Beverages and brewing • Construction vehicle washouts • Distribution centers • Food processing • Garbage truck washouts • Marinas, boat building and repair • Metal plating operations • Paper and wood products • Petroleum storage and refining • Printing	• All commercial activities • Industrial process water or rinse water • Loading and un-loading area wash- downs • Outdoor material storage
Institutional	• Cemeteries • Churches • Corporate Campuses • Hospitals • Schools and Universities	• Building maintenance (power washing) • Dumping/spills • Landscaping/grounds care • Parking lot maintenance (power washing) • Vehicle Washing
Municipal	• Airports • Landfills • Maintenance depots • Municipal fleet storage areas • Ports • Public works yards • Streets and highways	• Building maintenance (power washing) • Dumping/spills • Landscaping/grounds care • Parking lot maintenance (power washing) • Road Maintenance • Spill Prevention/ Response • Vehicle Fueling • Vehicle Maintenance / Repair • Vehicle Washing

Table 2. Land Use Condition or Activity that Produces Continuous Discharge

Residential	• Failed sanitary sewer infiltrating into storm drain • Sanitary sewer connection into storm drain • Failed septic systems discharging to storm drain system
Commercial / Industrial	• Failed sanitary sewer infiltrating into storm drain • Process water connections into storm drain • Sanitary sewer connection into storm drain
Institutional / Municipal	• Failed sanitary sewer infiltrating into storm drain • Sanitary sewer connection into storm drain

Source (Tables 1 and 2): Modified from Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center 5.for Watershed Protection, 2004, p. 12, Table 2

7. Special Pollution Abatement Plans

A Special Pollution Abatement Plan (SPAP) may be required for new developments and redevelopments on the basis of: (1) land use or type of business; (2) a history of air or water pollution at a site; (3) a history of air or water pollution by an owner/operator at other sites; (4) the potential to impact environmentally sensitive areas, such as wetlands; or (5) at the discretion of the local jurisdiction upon sound engineering judgment. A SPAP template is provided in Appendix D of this manual.

To obtain coverage under a SPAP, the property or business owner must submit a SPAP (see Appendix D) and any application fee, if appropriate, with the City's Stormwater Department. The SPAP requires supporting documentation for the SCM(s) proposed to reduce or mitigate special pollutants, including SCM specifications and maintenance information. SPAP-related SCMs must be included in the Record Drawings for the site.

Like any water quality SCM, SPAP related SCMs must be maintained in proper operating condition throughout the life of the land use or business, or otherwise as appropriate for the conditions of the site. It is the responsibility of the property owner to inspect and maintain SPAP-related SCMs, and to document such inspections and maintenance activities. Such documentation must be maintained by the property owner and provided to the City upon request. Further, the City of Maryville shall have the authority to inspect SPAP- related SCMs for long-term operation and performance, and to order corrective actions if necessary.

The following minimum standards shall be addressed in the SPAP:

- **Employees and/or staff of the business or land use type shall be trained on the requirements of the SPAP**, specifically addressing pollution source controls such as spill control and cleanup, proper waste management, chemical storage, and fluids management with vehicle servicing. The type and frequency of training shall be tailored to and appropriate for the land use or business. Documentation of the training shall be maintained with the SPAP and made available to the City of Maryville upon request.

- **Parking lots shall be swept monthly to remove gross solids**. Waste gathered during sweeping activities shall be disposed of properly.

- **Animal waste shall be prevented from entering streams, sinkholes, wetlands, ponds or any other component of the storm drain system.** Controls shall be instituted to collect the animal waste and properly treat or dispose of it.

- **Structural SCMs that have been designed to specifically address the target pollutants associated with the land use shall be utilized where appropriate to reduce pollutant loadings.** This requirement does not alleviate new developments and redevelopments from water quality treatment design criteria for total suspended solids (TSS). SCMs that are implemented to comply with SPAP minimum standards can factor into the % TSS calculation, provided that they have TSS removal capabilities.

- **Structural SCMs shall be inspected and maintained by the owner/permittee**. Inspections must be conducted at least annually. Maintenance shall be conducted as needed and as required by the manufacturer of the structural SCM or by the City of Maryville. Documentation of such inspections shall be maintained by the owner and made available upon request.

Table 3. Target Pollutants for SPAP Land Uses

Land Use	Target Pollutant
Vehicle, truck or equipment maintenance, fueling,washing or storage areas including but not limited to: automotive dealerships, automotive repair shops, and car wash facilities	**Oil, grease, detergents, solids, metals**
Recycling and/or salvage yard facilities	**Oil, grease, metals**
Restaurants, grocery stores, and other food service facilities	**Oil, grease, trash**
Commercial facilities with outside animal housing areas including animal shelters, fish hatcheries,kennels, livestock stables, veterinary clinics, or zoos	**Bacteria, nutrients**
Other producers of pollutants identified by the local jurisdiction by information provided to or collected by him/her or his/her representatives, or reasonably deduced or estimated by him/her or his/her representatives from engineering or scientific study	**As identified by the local Jurisdiction**

8. Corrective Actions and Enforcement

The City of Maryville has adopted a stormwater ordinance to prohibit illicit discharges to its storm drain system.

8.2 Financial Responsibility

Once an illicit discharge's source has been identified, the financial responsibility of removing it must be determined. The following describes three possible cases:

- The illicit discharge is a private party dumping into the storm drain system (a transient discharge). In this case, the City of Maryville's ordinance would allow a NOV to be issued and a fine to be imposed.

- The illicit discharge originated from a legal connection to the storm drain system (transient, intermittent, or continuous). For example, a washing machine discharging through a basement sump, an approved connection to the storm drain system. In this case, the City should require the property owner to disconnect

the washing machine from the sump discharge. A NOV may be issued and a fine may be imposed. The sump connection to the storm drain system, that was legally made, may be allowed to remain provided that the discharges do not contain pollutant substances and that the purpose is to alleviate flooding.

- The illicit discharge resulted from an illegal connection (i.e., a connection that violates plumbing codes). For intermittent or continuous discharges that are the result of an illegal direct connection into the storm drain system, the cost for disconnection will fall to either the property owner of the illegal connection or the City, depending on the circumstances of the connection. In general, financial responsibility rests with the owner unless the connection was incorrectly applied during a separation project conducted by the City. Similarly, if the illicit discharge is the result of a failed sanitary sewer line, the party responsible for the failed sanitary sewer line is financially responsible for the correction.

When an illicit discharge has been identified, the Stormwater Program Manager uses a stepped enforcement approach to notify and penalize parties responsible for the discharge. The steps include:

- Written notification of illicit discharge
- Notice of non-compliance
- Notice of violation
- Citations and/or referral to the City legal department.

- It should be noted that steps may vary depending on the severity and impact of the illicit discharge. A procedural action flow chart is provided in Appendix C to illustrate the process.

Levels of corrective action/enforcement are based on:

8.1.1 Regulatory Authority

- The City of Maryville sends the property owner a NOV, which may require the violator to take steps such as monitoring, elimination of an illicit connection or discharge, or payment of a fine.

- The person receiving the NOV may appeal it.

- If the person receiving the NOV does not appeal or loses the appeal and fails to correct the violation, the City may “take any and all measures necessary to abate the violation and/or restore the property.” The City then may require reimbursement from the violator for the cost of the abatement, including administrative costs.

- The City of Maryville may also seek an injunction against the violator “restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.”

- The City may recover all damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this ordinance, or any other actual damages caused by the violation.

8.1.2 Historical Information about the Problem

It is important for all the different components of the Illicit Discharge Program to be well documented. This information is kept on file and associated with the NPDES Stormwater Permit as part of the City of Maryville record,

as well as providing historical information that allows the City to identify reoccurring areas that have illicit discharge problems. The number of illicit discharges reported, the follow-up procedures taken, and current status of the illicit discharge are included in the MS4 Annual Report submitted to TDEC.

8.1.3 Discharger Understanding of the Problem

Often, home or business owners are not aware of the existence of illegal connections between their buildings and the storm sewer systems. In these cases, providing the responsible party with information about the connection, its environmental consequences, the applicable regulations, and how to remedy it may be enough to secure voluntary compliance. The cost of removing the connection and reconnecting it to the sanitary sewer system, however, may be a problem for the homeowner. The City of Maryville may choose in these instances to provide assistance with these costs.

8.1.4 Severity/Frequency of Occurrence

After the illicit discharge has been corrected, a follow-up inspection is warranted. The duration of time that passes before the re-inspection occurs varies due to the type and severity of the illicit discharge. Residential areas should occur within a year, while commercial or industrial facilities should have re-inspection within 6 months and a follow-up within 1 year.

8.1.5 Potential Impacts to Safety, Environment, and Public Welfare

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of the City's ordinance is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

8.1.6 Potential Cost of Corrective Action

Depending on the size, magnitude, and imposed damages of the discharge, the costs of violations vary widely.

- A first time violation with no potential damages to the water quality may only receive a NOV with a 30-day limit for corrective action.
- A repeat violation for a minor discharge by the same person is subject to a fine of $50 for the first violation and $50 for each additional violation.
- First time large and hazardous discharges may require immediate corrective actions and a fine on a larger fine with consistent with the existing legal authority of the City.
- If the corrective actions are done by the City, a reimbursement from the violator for the cost of the abatement, including administrative costs may be imposed on the property owner.

8.2 Notice of Violation

For violations of the City's ordinance, a NOV may be issued. A blank letter is provided for use in Appendix D. It should be noted that the NOV describes a schedule for the removal to be completed, as well as a summary of any agreements between the City and Property Owners.

8.3 Emergency Suspensions

The City of Maryville might allow a suspension of access to the storm drain system for discharges that present "imminent and substantial danger to the environment or to the health or welfare of persons, or to the storm drain system". Suspension may include blocking pipes, constructing dams, or taking other measures on public ways or public property to physically block the discharge.

8.4 Multiple Violators

In the event more than one person is determined to have violated the provisions of this ordinance, all applicable civil penalties may be imposed against each person, and recoverable damages, costs, and expenses may be allocated among the persons on any equitable basis. Factors that may be considered in determining an equitable allocation include:

- Awareness of the violation;
- Ability to correct the violation;
- Ability to pay damages, costs, and expenses;
- Cooperation with government agencies;
- Degree of impact or potential threat to water or sediment quality, human health, or the environment.

8.5 Discharges from State Regulated Facilities

Several categories of facilities are regulated by the State of Tennessee for stormwater discharges under the Multi-Sector General Permit for Industrial Activities. Because these facilities are already responsible to one enforcement authority for stormwater discharges the City will coordinate reporting and enforcement with the State. If an illicit discharge that is suspected or determined to be coming from a facility that is subject to state regulatory authority, the City should notify both the suspected discharger and the state (TDEC) and monitor the corrective action. The initial notification can be verbal but followed in writing.

8.6 Enforcement Procedure

8.6.1 For Homeowners and Commercial Businesses

The City of Maryville Stormwater Department has a Stormwater Ordinance regulating users who discharge into the storm sewer systems;

1. Upon discovery of a potential violation of this ordinance, the Stormwater Department will investigate within seven (7) calendar days from receipt of complaint and initial enforcement actions shall be taken within seven (7) calendar days of the investigation on confirmed illicit discharges. The Stormwater Department notifies the user of the nature of the violation and directs that actions be taken to remedy the noncompliance.

2. Confirmed illicit discharges shall be eliminated as soon as practicable. If the elimination will take more than fourteen (14) calendar days of receipt of the notice, a corrective action plan to eliminate the identified illicit discharge shall be developed by the owner/operator of the source in concurrence with the MS4.

3. The City shall address any non-stormwater discharge or flow that it identifies as a significant contributor of pollutants to the MS4.

4. If the responsible party or source of a confirmed illicit discharge cannot be identified after a comprehensive investigation in accordance with all stormwater management program IDDE investigation and tracing procedures, the illicit discharge shall be referred to TDEC within fourteen (14) calendar days of completing the investigation. All records and documentation of the investigation will be provided to TDEC in the referral. The referral shall be made to the local environmental field office.

5. If a violation is found within the house or business that appears to present an immediate danger to human health or welfare, a verbal notification is given immediately by telephone or visit, directing the user to take immediate action to discontinue or reduce the discharge to safe levels.

6. A written notice is sent within 5 days of the verbal notification.

7. The Stormwater Department has the power to issue the following Administrative Orders:

    - Cease and Desist Order (directing the user to stop the violating action),
    - Compliance Order (directing the user take action to correct violation),
    - Show Cause Order (directing the user to show cause why a proposed enforcement action should not be taken), and
    - Consent Order (establishing an agreement with a user to correct a violation).

8. If the violator does not take action within the time allotted, the Stormwater Department has the right to eliminate the illicit discharge at the expense of the violator.

9. Legal actions may be taken against, and penalties imposed on, any violator that does not comply.

8.6.2 For Industrial, Commercial Facilities[1]

The City of Maryville will target certain industrial and commercial facilities for site inspections starting at the other end of the pipe from the outfall survey approach.

City personnel will conduct random visits to the facilities; dye test a representative number of plumbing fixtures, and observed general “housekeeping” practices.

If no violations are found, a thank you letter is to be sent to the facility acknowledging staff participation and closing the file.

If a facility is found to have an illicit connection, a violation letter is to be sent, giving the facility 30 to 90 days to correct it.

If a facility failed to comply with the request, a NOV is thereby issued to the business owner(s) for immediate corrective actions and building department must be involved.

If the City is unable to gain compliance, the facility must be referred to the TDEC. When an illicit connection is eliminated, the City provides confirmation. Once a correction was confirmed, a confirmation/thank you letter was sent to the business owner(s), thanking them for their participation and closing the file.

[1] Entities operating under a valid multi-sector permit and file with the City of Maryville, as well as with TDEC, shall not be subject to targeted inspections. The City of Maryville, however, reserves the right to inspect if evidence suggests such facility to be a source of illicit discharge.

9. Program Evaluation

The Stormwater Program Manager evaluates City of Maryville's IDDE program on a periodic basis to assess its effectiveness and efficiency and to identify where improvements should be made. The review examines the following components:

Priority Areas: Are the priority areas initially identified still appropriate? Considerations include reviewing the priority assignments and inspection results to assess if any changes have occurred since the initial evaluation was completed (such as: have additional illicit discharges been discovered in any of the areas? Has a new 303(d) list come out naming new water bodies as impaired?)

Detection Program: Is the detection program effective? Should resources and the focus of inspections be adjusted based on the number of illicit discharges detected by the various detection mechanisms (inspections, citizen call-ins, and opportunistic inspections)?

Tracing Techniques: What tracing techniques were generally used? What tracing techniques were generally effective? In how many instances were visual inspections of the area sufficient to identify the source of the illicit discharge? Were there any times the equipment necessary to effectively trace an illicit discharge was not used because it was not available, or was too costly to obtain?

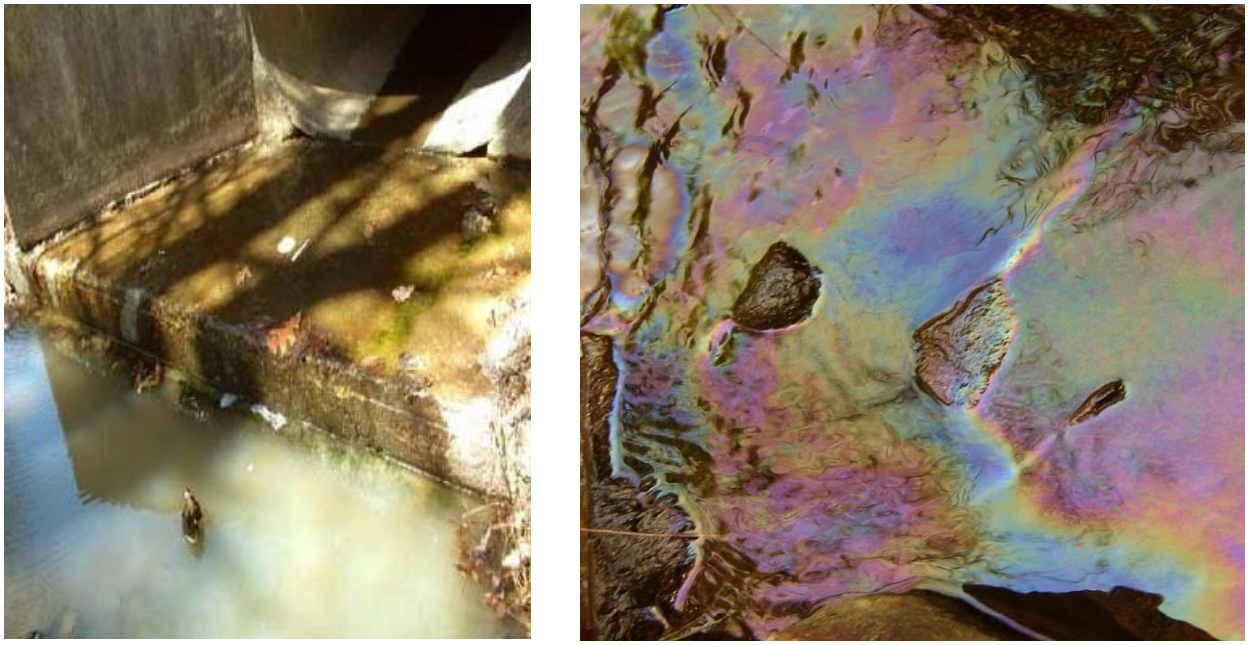
Evaluation of the overall IDDE program yields benefits that may include reduced costs for future inspection and IDDE efforts. Keeping track of where illicit discharges are likely to occur and what techniques are effective is useful to save time and money.

Appendix A - Maps of Outfalls and Hotspots

MAPS OF OUTFALLS

MAPS OF HOTSPOTS

Appendix B - Common Stormwater Pollutants, Sources, and Impacts



Poor Quality Streams Due to Illicit Discharge

Stormwater runoff contains pollutants that can harm human health, degrade water quality and aquatic habitat, and impair ecosystem functions. On its way to streams, estuaries, and other receiving water bodies, stormwater runoff accumulates pollutants such as oil, gas, and other hydrocarbons, heavy metals, deicers, pesticides, fine sediment, fertilizers, and bacteria, all of which can impair water quality. Runoff from fertilized lawns contributes excess nutrients to water bodies, which can lead to algal blooms and in extreme cases, fish kill events due to low dissolved oxygen levels.

Elevated fecal coli form levels impair water quality and can lead to restrictions on the use and enjoyment of natural resources such as shellfish beds and swimming areas. Other stormwater pollutants of concern are toxic contaminants, such as heavy metals and pesticides, which originate from vehicles and businesses or from homeowner activities.

All of these pollutants can wash into receiving water bodies during storm events. Understanding the sources of these pollutants and the impacts each pollutant has can help inform municipal planning and assist in identifying priority goals and objectives when managing stormwater. The following table summarizes common stormwater pollutants, their sources and potential impacts.

Common Stormwater Pollutants	Sources and Impacts	Pollutant Sources Impacts
Sediment	Construction sites, eroding stream banks and lakeshores, winter sand and salt application, vehicle/boat washing, agricultural sites.	**Destruction of plant and fish habitat,transportation of attached oils, nutrients and other pollutants,increased maintenance costs, flooding**
Nutrients (phosphorus, nitrogen)	Fertilizers , malfunctioning septic systems, livestock bird and pet waste, vehicle/boat washing, grey water, decaying grass and leaves, sewer overflows, leaking trash containers, leaking sewer lines	**Increased potential for nuisance or toxic algal blooms, increased potential for hypoxia/anoxia (low levels of dissolved oxygen which can kill aquatic organisms)**
Hydrocarbons (petroleum compounds)	Vehicle and equipment leaks, vehicleand equipment emissions, pesticides, fuel spills, equipment cleaning, improper fuel storage and disposal	**Toxic to humans and aquatic life at low levels**
Heavy Metals	Vehicle brake and tire wear vehicle/equipment exhaust, batteries, galvanized metal, paint and wood preservatives, fuels, pesticides, cleaners	**Toxic at low levels, drinking water contamination**
Pathogens (bacteria)	Livestock, bird and pet wastes, malfunctioning septic systems, sewer overflows, damaged sanitary lines.	**Risk to human health leading to closure of shellfish areas and swimming areas,drinking water contamination**
Toxic Chemicals	Pesticides; dioxins, polychlorinatedbiphenyls (PCBs), spills, illegaldischarges and leaks	**Toxic to human and aquatic life at low levels**
Debris/Litter	**Improper waste disposal and storage, fishing gear, leaking rubbishcontainers, cigarette butts, littering**	**Potential risk to human and aquatic life, aesthetically displeasing**

Appendix C - SOPs and Inspection Forms

Standard Operating Procedure for:	
C.1 IDDE: Inspections During Mapping	
Purpose of SOP:	This SOP provides a basic checklist for managers and field crews conducting illicit discharge inspections during mapping.

Always:

- ☐ Characterize the outfall by recording information on the Storm Drain Characteristic Form.
- ☐ Conduct inspections during dry weather periods using the IDDE Outfall Inspection Form.
- ☐ Follow procedure below if an illicit discharge is encountered (such as raw sewage, paint, etc.).
- ☐ Conduct inspections with at least two staff per crew.
- ☐ Carry a list of emergency phone numbers.

Whenever Possible:

- ☐ Conduct inspections during low groundwater and leaf off conditions.
- ☐ Photograph the outfall with a digital camera (use dry erase or chalk board to identify outfall).
- ☐ Identify and label the outfall with a unique identifier. For example, “SWO-013”.
- ☐ If dry weather flow is present at the outfall, and the flow does not appear to be an illicit discharge attempt to identify the source of the flow (intermittent stream etc.), then document the discharge for future comparison.
- ☐ Carry an authorization letter.
- ☐ Collect samples of flowing discharges before and after source removal. (Contact City of Maryville for technical assistance.)

Never:

- ☐ Never put yourself in danger.
- ☐ Never enter private property without permission or as may be legally authorized.

Procedures to follow if illicit discharge is detected:

- ☐ Call dispatch / supervisor.
- ☐ Use the IDDE Outfall Inspection Form to document observations.
- ☐ Visually inspect general area for possible sources.
- ☐ Take photos.
- ☐ Estimate flow/collect samples if instructed to do so.

Standard Operating Procedure for:	
C.2 IDDE: Long-Term Inspections	
Purpose of SOP:	To provide supervisor and field crew with a punch list of things to remember during regularly scheduled inspections.

Always:

- ☐ Conduct inspections during dry weather periods.
- ☐ Check the outfall's dimensions, shape, and component material using IDDE Outfall Inspection Form.
- ☐ Characterize and record observations on basic sensory and physical indicators (e.g., odor, color, oil sheen).
- ☐ If an illicit discharge is encountered (such as raw sewage, paint, etc.), follow the procedure below.

Whenever Possible:

- ☐ Perform inspections of all the outfalls at least once per permit cycle (long term).
- ☐ Photograph the outfall with a digital camera (use dry erase board to identify outfall).
- ☐ Identify and label the outfall with a unique identifier. For example, "SWO-013".
- ☐ Carry a letter of authorization with you during inspections that outline who you are and what you are doing.
- ☐ If dry weather flow is present at the outfall, and the flow does not appear to be an obvious illicit discharge (e.g., flow is clear, odorless, etc.), attempt to identify the source of the flow (intermittent stream, etc.) then document thedischarge for future comparison.
- ☐ Collect samples before and after source removal. Contact City of Maryville for technical assistance.

Never:

- ☐ Never put yourself in danger.
- ☐ Never enter private property without permission or as may be legally authorized.

Procedures to follow if illicit discharge is detected:

- ☐ Call dispatch / supervisor.
- ☐ Use the IDDE Outfall Inspection Form to document observations.
- ☐ Visually inspect general area for possible sources.
- ☐ Take photos.
- ☐ Estimate flow/collect samples if instructed to do so.

Standard Operating Procedure for:	
C.3 IDDE Opportunistic Inspections	
Purpose of SOP:	This SOP provides field personnel with a quick checklist of proper procedures to follow if they observe illicit discharges while conducting their regular duties.

Always:

- ☐ Call dispatcher, supervisor, or stormwater inspector if you see evidence of an illicit discharge. Assess the general area of the illicit discharge to see if you can identify its source.

Whenever Possible:

- ☐ Use the Incident Tracking Form to document observations.
- ☐ Take photographs of the illicit discharge.
- ☐ Carry an IDDE Outfall Inspection Form.
- ☐ Use the Catch Basin Cleaning Form to document observations during cleaning.

Never:

- ☐ Never put yourself in danger.
- ☐ Never enter private property without permission or as may be legally authorized.

Procedures to follow if illicit discharge is detected:

- ☐ Call dispatch / supervisor.
- ☐ Use the Incident Tracking Form to document observations.
- ☐ Visually inspect general area for possible sources.
- ☐ Take photos.
- ☐ Estimate flow/collect samples if instructed to do so.

Standard Operating Procedure for:	
C.4 IDDE: Citizen Call-in Inspections	
Purpose of SOP:	To collect appropriate information from a citizen reporting a potential illicit discharge to increase the chances of identifying and removing its source.

Always:

- ☐ Use the Incident Tracking Sheet to collect the appropriate information.
- ☐ Promptly investigate reported incidents
- ☐ Document any further action taken
- ☐ Forward all potential hazardous substance reports to the 911 call center.

Whenever Possible:

- ☐ Dispatch Personnel are to use the Incident Tracking Form.
- ☐ Document and review incidents reported by citizens on an annual basis to look for patterns of illicit discharges and to evaluate the call-in inspection program.

Never:

- ☐ Never put yourself in danger.
- ☐ Never enter private property without permission or as may be legally authorized.

Standard Operating Procedure for:	
C.5 IDDE: Septic System Inspections	
Purpose of SOP:	Failed septic systems can adversely impact water quality. This SOP provides a quick reference list to supervisors and field crews that are conducting an initial screening for failures in areas that may be identified in the full IDDE program.

Always:

- ☐ Refer potential septic system failures to the local Health Officer for enforcement.

Whenever Possible:

- ☐ Screen high risk areas (older areas or areas near impaired water bodies).
- ☐ Look for indicators of failures, such as wet areas or disagreeable odors near the leach field.
- ☐ Document septic system inspections in a summary report for future reference.
- ☐ Refer troublesome enforcement actions to the City of Maryville.

Never:

- ☐ Never put yourself in danger.
- ☐ Never enter private property without permission or as may be legally authorized.

Standard Operating Procedure for:	
C.7 IDDE: Tracing Illicit Discharges **(Flow chart on next page)**	
Purpose of SOP:	To provide a quick reference list of items to keep in mind during tracing activities to efficiently and systematically identify the source of an illicit discharge.

Always:

- ☐ Review / consider information collected when illicit discharge was initially identified (Incident Tracking Form or Outfall Inspection Form).
- ☐ Survey the general area / surrounding properties to identify potential sources of the illicit discharge as a first step.Trace illicit discharges using visual inspections of upstream points as a second step.
- ☐ Document tracing results for future reference.

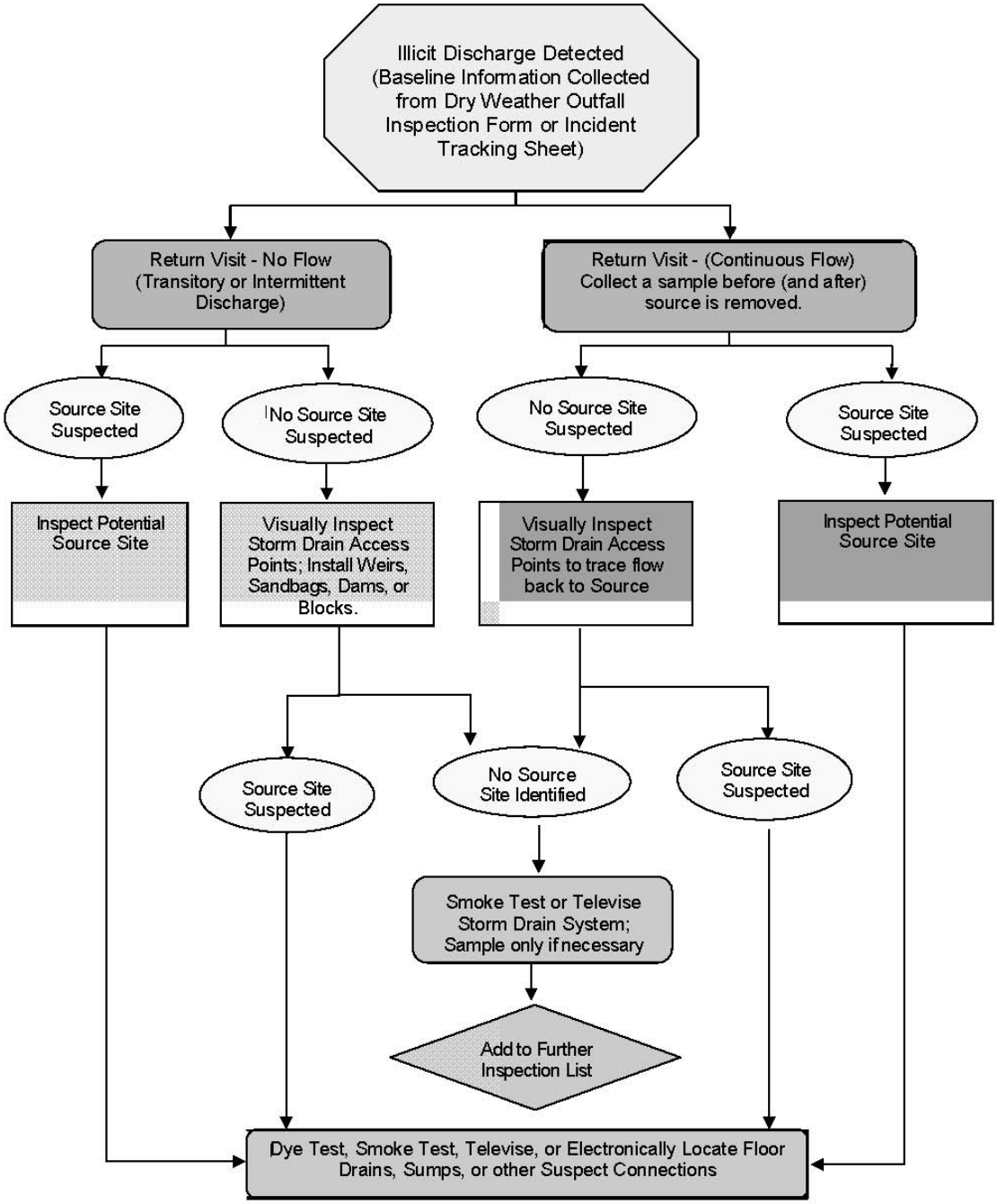
Whenever Appropriate:

- ☐ Use weirs, sandbags, dams, or optical brightener monitoring traps to collect or pool intermittent discharges duringdry weather.
- ☐ Smoke test or televise the storm drain system to trace high priority, difficult to detect illicit discharges. Dye test individual discharge points within suspected buildings.
- ☐ If the source cannot be found, add the location to a future inspection program.Collect bacterial samples of flowing discharges to confirm/refute illicit discharge.

Never:

- ☐ Never put yourself in danger.
- ☐ Never enter private property without permission or as may be legally authorized.

TRACING TECHNIQUES FLOW CHART



Source: Center for Watershed Protection

Standard Operating Procedure for:	
C.8 IDDE Removing Illicit Discharges **(Process chart on next page)**	
Purpose of SOP:	Proper removal of an illicit discharge will ensure it does not recur. Using legal methods for the removal will minimize the municipality's liability. This SOP provides an overview of illicit discharge removal procedures.

Always:

- ☐ Determine who is financially responsible
- ☐ Suspend access to storm drain if threats of death or serious physical harm to humans or the environment are possible.
- ☐ Repair/correct cause of discharge if City is responsible.
- ☐ Collect a confirmatory sample after the removal. Seek technical assistance from The City of Maryville, if needed

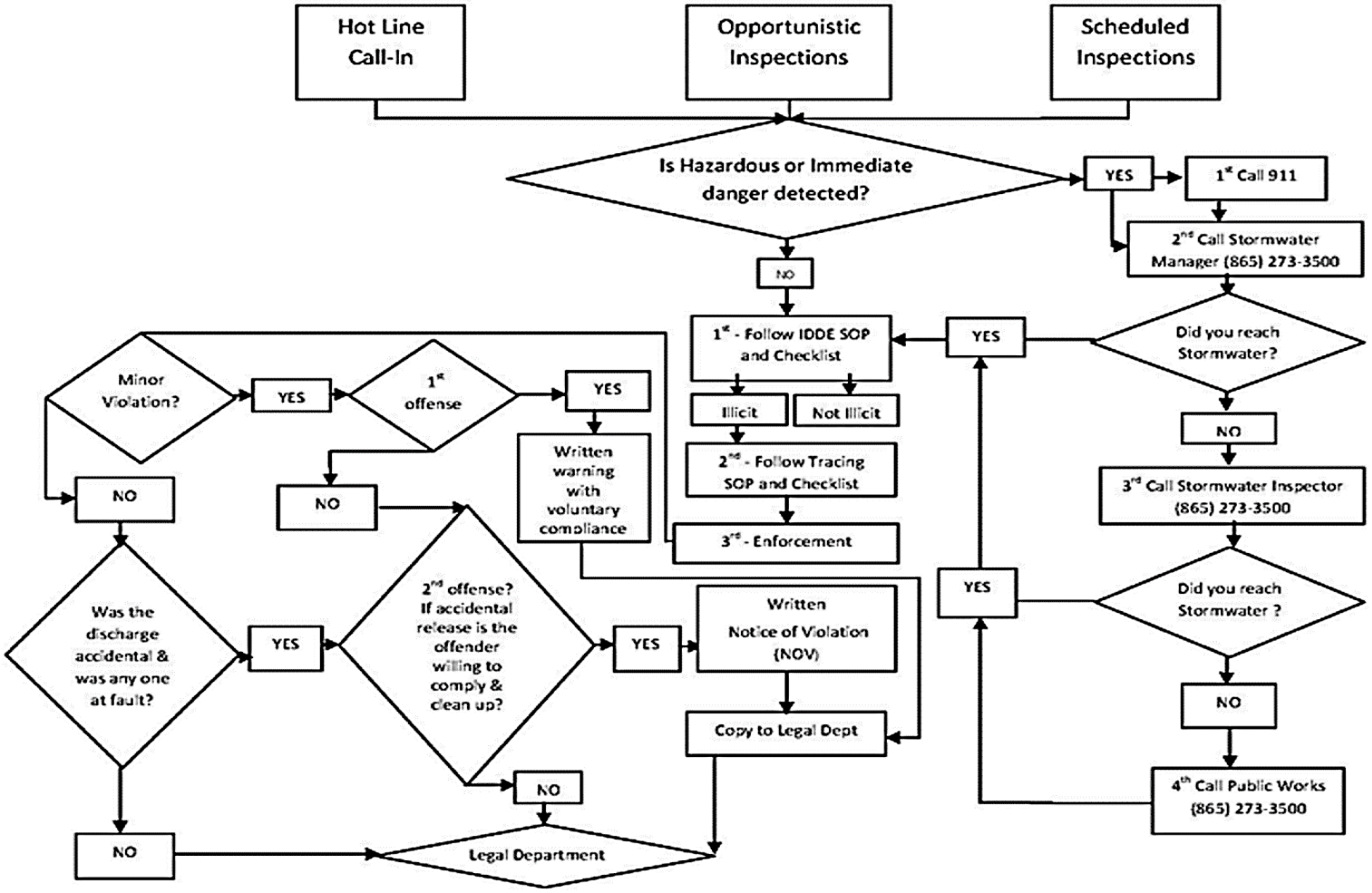
Whenever Possible:

- ☐ Issue a Notice of Violation for violations of the municipal ordinance.

Never:

- ☐ Never repair/correct cause of discharge on private property until directed to do so by the appropriate authority (i.e. stormwater program manager, etc.)

City of Maryville IDDE Procedure



IDDE Outfall Inspection Form

Location & Conditions Information

Date: **Inspector:** **Time:**

Outfall ID: **Outfall Location:**

Receiving Water body:

Photo Taken: Yes ☐ No ☐ **Photo ID:**

Weather: Clear ☐ Cloudy ☐ **Approximate Temp:** **Wind Present:** Yes ☐ No ☐

Precipitation in the past 3 days: No ☐ Yes ☐ inches

Pipe/Channel Flow: None ☐ Trickle ☐ Steady ☐ 1/4 full flow or more ☐

Color (if flow is present): _____

Inspection Scoring Information	*Check all that are applicable*				
Obvious Debris/Pollution	✓	**Odor**	✓	**Water Clarity**	✓
None		None/Natural		Clear	
Foam		Musty		Cloudy	
Staining		Sewage/septic		Opaque	
Floating Green Scum		Petroleum			
Oil / Film		Other			
Vegetative Mat/or Gray Mat					
Sewage Solids					
Additional Information:					

Sediment Condition: Free ☐ 1/4 Full ☐ 1/2 Full ☐ 3/4 Full ☐ Plugged ☐

Structure Condition: Excellent ☐ Good ☐ Fair ☐ Poor ☐

Trash/litter present: Yes ☐ No ☐ **Yard waste observed:** Yes ☐ No ☐

General Comments:

Potential Sources / Actions Taken:

Sample collected? Yes ☐ No ☐

By whom?

Follow up required Yes ☐ No ☐

Parameters:	**Results:**

NOTE: This information serves as a guide and is to accompany the IDDE Outfall Inspection Form

Odor - Strong odors, such gasoline, and solvents are associated with high responses on the toxicity screening test.
- *Stale sanitary wastewater:* sewage
- *Detergent, perfume:* Laundromat or household laundry
- *Sulfur ("rotten eggs"):* industries that discharge sulfide compounds or organics (meat packers, dairies)
- *Oil and gas:* facilities associated with vehicle maintenance or petroleum product storage (gas stations) or petroleum refineries
- *Rancid-sour:* food preparation facilities (restaurants, hotels)

Color - Important indicator of inappropriate industrial sources. Dark colors, such as brown, gray, or black are the most common.
- *Yellow:* chemical plants, textile, and tanning plants
- *Brown:* meat packers, printing plants, metal works, stone and concrete, fertilizers, and petroleum refining facilities [note: can be from natural organic acids if a wetland is upstream]
- *Green:* chemical plants, textile facilities
- *Red:* meat packers [note: can be from organic acids if a wetland is upstream]
- *Gray:* dairies

Turbidity - The cloudy appearance of water caused by the presence of suspended or colloidal matter. In dry weather, high turbidity is often a characteristic of undiluted industrial discharges.
- *Cloudy:* sanitary wastewater, concrete or stone operations, fertilizer facilities, automotive dealers
- *Opaque:* food processors, lumber mills, metal operations, pigment plants

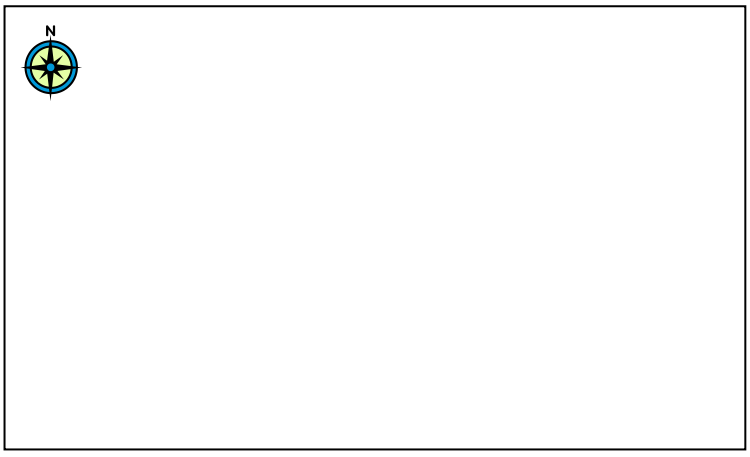
Floatable Matter - A contaminated flow may contain floating solids or liquids directly related to industrial or sanitary wastewater pollution. Floatables of industrial origin may include animal fats, spoiled food, oils, solvents, sawdust, foams, packing materials, or fuel.
- *Oil sheen:* petroleum refiners or storage facilities and vehicle service facilities. [Note: there is a type of bacteria that looks like oil sheen. **If you take a stick and swirl around the sheen, it will break up into blocky pieces if it is the bacteria. A true oil sheen will quickly re-form and not look blocky.**]
- *Toilet paper bits, fecal bits, food particles*: sanitary wastewater
- *Soap suds*: if white or a clear sheen, laundry discharge (check odor) [note: can also occur from natural surfactants; usually off-white or tan with an earthy-fishy odor.]

Deposits and Stains - Any type of coating near the outfall, usually a dark color. Deposits and stains will often contain fragments of floatable substances.
- *Lots of sediment:* construction site erosion, sand and gravel pits, winter road applications
- *Oil stain:* petroleum storage, vehicle service facilities, petroleum refineries
- *Rusty:* precipitates from iron-rich water (natural or industrial) [slimy and clumpy could be iron bacteria]
- *Grayish-black deposits and hair:* leather tanneries
- *White crystalline powder:* nitrogenous fertilizer waste

Vegetation – Vegetation surrounding an outfall may show the effects of industrial pollutants. Decaying organic materials coming from various food product wastes would cause an increase in plant life, while the discharge of chemical dyes and inorganic pigments from textile mills could noticeably decrease vegetation. It is important not to confuse the adverse effects on high storm water flows on vegetation with highly toxic dry-weather intermittent flows.
- *Excessive growth:* food product facilities, fertilizer runoff (lawns, golf courses, and farms)
- *Inhibited growth:* high storm water flows, beverage facilities, printing plants, metal product facilities, drug manufacturing, petroleum facilities, vehicle service facilities, and automobile dealers

Damage to Outfall Structures - Outfall damage can be caused by severely contaminated discharges that are very acidic or basic in nature. Primary metal industries have a strong potential to cause outfall structure damage because their batch dumps are highly acidic. Poor construction, hydraulic scour, and old age can also negatively affect the condition of al outfall structure.
- *Concrete or spalling (breaking off into chips or layers):* industrial flows
- *Peeling paint*: industrial flows
- *Metal corrosion*: industrial flows

NOTE: Sketch site map/notes



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Adaptation of "Drainage Systems: a User's Guide". EPA Office of research and Development, EPA/600/R-92/238).

ILLICIT DISCHARGE INCIDENT TRACKING FORM

Incident ID:			
Responder Information			
Call taken by:	**Call date:**		
Call time:	**Precipitation (inches) in past 24-48 hrs:**		
Reporter Information			
Incident time:	**Incident date:**		
Caller contact information (*optional*):			
Incident Location (complete one or more below)			
Latitude and longitude:			
Nearest outfall location / ID:	**Last known outfall inspection:**		
Primary Watershed: ☐Pistol Creek ☐ Dunlap Branch ☐ Springfield Branch ☐ Laurel Bank ☐ Browns Creek ☐ Unknown			
Closest street address:			
Location Description:	**Potential for Discharge to Enter Into:**		
☐ Upland area *(Land not adjacent to stream)* (If checked, complete Part A.)	☐ Stream/ Other Waterbody	☐ Storm Drain	☐ Sinkhole
☐ Stream corridor (*In or adjacent to stream)* (If checked, complete Part B.)	☐ Ditch	☐ Other: _____	
Photos Taken: ☐ Yes ☐ No Photo(s) Description: _____			
Part A. Upland Problem Indicator Description			
☐ Dumping	☐ Oil/solvents/chemicals	☐ Sewage	
☐ Wash water, suds, etc.	☐ Other: _____		
Part B. Stream Corridor Problem Indicator Description			
Odor	☐ None	☐Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural gas	☐ Other: Describe in "Narrative" section		
Appearance	☐ Opaque	☐ Stain	☐ Cloudy	☐ Suds
	☐ Color: _____	☐ Other: Describe in "Narrative" section		
Floatables	☐ None	☐ Sewage (toilet paper, etc.)	☐ Algae/Scum	☐ Dead fish/Animals
	☐Garbage/Trash	☐ Oil Sheen	☐ Other: Describe in "Narrative" section	
Narrative description of problem indicators:				
Inspection Type: ☐ Initial ☐ Follow-up ☐ Final Follow-up Action Description:				
Suspected Violator (name, personal or vehicle description, license plate #, address, etc.):				

NOTE: This information serves as a guide and is to accompany the Illicit Discharge Incident Tracking Sheet

Odor - Strong odors, such gasoline, and solvents are associated with high responses on the toxicity screening test.
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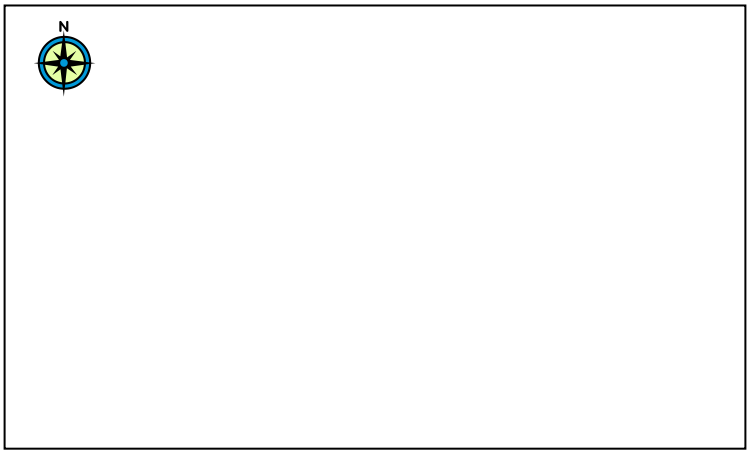
- *Metal corrosion*: industrial flows

NOTE: Sketch site map/notes



_____
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_____

Adaptation of "Drainage Systems: a User's Guide". EPA Office of research and Development, EPA/600/R-92/238).

Hotspot Site Investigation Form

Basic Information

Date: **Inspector:** **Time:**

Property Name and Address:

Owner: **Owner Phone/Email:**

District Number: _____ **Primary Watershed:** □ Pistol Creek □ Dunlap Branch □ Springfield Branch □ Laurel Bank □ Browns Creek □ Unknown

Category: □ Automotive Repair □ Car Wash □ Convenience Store □ Dry Cleaner □ Gas Station □ Restaurant □ Retail Parking □Other

Basic Description of Operation: _____

Photos Taken: □ Yes □ No **Photo(s) Description:** _____

Inspection Reason: □ Annual □Opportunistic □ Complaint

A. Vehicle/Equipment Operations □ **N/A**				
Types of Vehicles: □ Passenger Vehicles □ Other: _____				
Vehicle activities: □ Maintained □ Repaired □ Recycled □ Fueled □ Washed □ Stored				
	Yes ✓	**No** ✓	**Potential Pollution Source?**	
			Yes ✓	**No** ✓
Vehicles stored and/or repaired outside?	□	□	□	□
Vehicles have runoff diversion methods?	□	□	□	□
Evidence of spills/leakage from vehicles?	□	□	□	□
Uncovered outdoor fueling areas present?	□	□	□	□
Fueling areas directly connected to storm drains?	□	□	□	□
Vehicles washed outdoors?	□	□	□	□
Does the area where vehicles are washed discharge to the storm drain?	□	□	□	□
B. Outdoor Materials □ **N/A**	**Yes** ✓	**No** ✓	**Potential Pollution Source?**	
			Yes ✓	**No** ✓
Loading/unloading operations present?	□	□	□	□
If yes, are they uncovered **and** draining towards storm drain inlet?	□	□	□	□
Materials stored outside?	□	□	□	□
If yes, are they □ Solid? □ Liquid? Description: _____ Where are they stored? □ grass/dirt area □ concrete/asphalt □ bermed / diked area				
Storage area connected to storm drain? □ Directly □ Indirectly		□	□	□
Staining or discoloration around area visible?	□	□	□	□
Is outdoor storage area uncovered?	□	□	□	□
Liquid Materials stored **without** secondary containment?	□	□	□	□
Are storage containers missing labels or in poor condition (rusting)?	□	□	□	□
C. Waste Management □ **N/A**				
Type of waste (check all that apply): □ Garbage □ Construction Materials □ Hazardous Materials				

Dumpster Condition (check all that apply): □ No cover / Lid is open □ Damaged / poor condition □ Leaking or evidence of leakage (stains on ground) □ Overflowing

	Yes ✓	No ✓	Potential Pollution Source? Yes ✓	Potential Pollution Source? No ✓
Dumpster located near a storm drain inlet?	□	□	□	□
If yes, are runoff diversion methods (berms, curbs) lacking?	□	□	□	□

D. Physical Plant □ **N/A**

Building: Approximate age: _____ yrs. Condition of surfaces: □ Clean □ Stained □ Dirty □ Damaged

Parking Lot: Approximate age: _____ yrs. Condition of surfaces: □ Clean □ Stained □ Dirty □ Damaged
Surface Material: □ Concrete □ Asphalt □ Gravel □ Permeable: □ Don't Know □ Grass/Soil

	Yes ✓	No ✓	Potential Pollution Source? Yes ✓	Potential Pollution Source? No ✓
Is there evidence that building maintenance results in discharge to storm drains (staining / discoloration)?	□	□	□	□
Do downspouts discharge to impervious surface?	□	□	□	□
Are downspouts directly connected to storm drains?	□	□	□	□
Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?	□	□	□	□

E. Turf / Landscaping Area □ **N/A**

% of site with: Forest Canopy: _____% Turf grass: _____% Landscaping: _____% Bare Soil: _____%

Rate turf management status: □ Good □ Fair □ Poor

	Yes ✓	No ✓	Potential Pollution Source? Yes ✓	Potential Pollution Source? No ✓
Evidence of permanent irrigation or "non-target" irrigation?	□	□	□	□
Do landscaped areas drain to the storm drain system?	□	□	□	□
Plants (leaves, grass clippings, etc.) accumulate on impervious surface?	□	□	□	□

F. Stormwater Infrastructure □ **N/A**	Yes ✓	No ✓	Potential Pollution Source? Yes ✓	Potential Pollution Source? No ✓
Are stormwater treatment practices present? If yes, describe:	□	□	□	□
Are private storm drains located at the facility?	□	□	□	□
Is trash present in gutters leading to storm drains?	□	□	□	□

Hotspot Status

Corrective Action Needed: □ Refer for immediate enforcement □ Suggest follow-up on-site inspection
□ Check to see if hotspot is an NPDES non-filer □ Test for illicit discharge
Follow up required: □ Yes □ No

Notes:_____
_____
_____

Appendix D -Templates of Letters Sent to Violators

Notice of Violation Letter (*send if SCM ownership has changed***)**
[Date]
[Contact Name]
[Organization]
[Mailing Address]
[City], [State] [Zip]

RE: Notice of Violation (Voluntary Compliance & Corrections)

Dear *[Contact Name]*:

On Date,_____, City Inspector and I responded to a report of a discharge to the storm drain system on property owned by you at_____Street in_____, TN. We did confirm the presence of_____.
This is to confirm the conversation I had with you. You are in the process of_____and we agreed you would have the correction completed by_____. We discussed that you will

_____

_____

_____.

This discharge is in violation of the eighth edition of the Maryville Stormwater Ordinances.
Please keep me informed of how the correction is proceeding. Enclosed is a copy of the Ordinance for your review.

If I can be of further assistance, please do not hesitate to contact my office. We are open Mondays through Fridays, from 8:00 a.m. to 5:00 p.m. I can be reached at (865) 273-3500.

Sincerely,

Jana Brown
Stormwater Program Manager City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

Education Letter (*send if SCM ownership has changed***)**

[Date]
[Contact Name]
[Organization]
[Mailing Address]
[City], [State] [Zip]

RE: Annual SCM Inspection

Dear *[Contact Name]*:

During *[site visit date],* the **City of Maryville's Stormwater Department** will be conducting an annual inspection of the *[type of SCM]* in your control or ownership located at *[Physical Address]*. State and local regulations require an annual inspectionof all structural best management practices (SCMs) to ensure the proper function of these structures. This inspection willfocus on key structural components, and operational and maintenance practices.

Stormwater Management will notify you of the results of the inspection and any recommendations or requirements to ensure the proper function of your SCM. If there are any recommendations or requirements, you will have 90 days to complete those maintenance items. Staff will also be available to offer technical assistance and answer any questions you may have concerning your SCM.

General information on routine and non-routine maintenance of your SCM is enclosed. If you have any questions concerning the inspections process or the enclosed information, please feel free to contact me at (865) 273-3500.

Sincerely,

Jana Brown
Stormwater Program Manager
City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

cc: Inspections file

Illicit Discharge Inspection Report Letter - with requirements(Send certified with inspection report)

Certified Mail
First Class Mail
[Date]
[Contact Name]
[Organization]
[Mailing Address] [City], [State] [Zip]

RE: Inspection of:_____

Dear *[Contact Name]*:

On *[site visit date]*, the **City of Maryville's Stormwater Department** completed an inspection of the property in your ownership/operation located at *[Physical Address]*. State and local regulations require a routine inspection of all sitesidentified by the City of Maryville as sites with the potential to cause stormwater runoff pollution (Hotspots) to ensure thatthere are no apparent illicit discharges as defined by the City's Illicit Discharge Ordinance, Chapter 6 found in Title 19 Stormwater of the City Code. This inspection focused on key structural components and operational and maintenance practices.

The inspection found that the following items are in violation of the Illicit Discharge Ordinance. The City of Maryville allows the following items to be corrected within 30 days from the date of this letter. Please complete all items on or before ***[Correction Date].***-

_____
_____
_____
_____

Work should be completed in a timely manner, and the Stormwater Department should be contacted after correctiveactions have been taken. If there are any questions concerning the required items or the time frame, please feel free to contact me at (865) 273-3500.

Sincerely,

Inspector's name, Title
Stormwater Department

Jana Brown
Stormwater Program Manager
City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

Final letter – work completed w/ phone call

[Date]
[Contact Name]
[Organization]
[Mailing Address] [City], [State] [Zip]

RE: Completion of Recommended Maintenance Items

Dear [Contact Name]:

On *[site visit date]*, **City of Maryville's Stormwater Department** completed an inspection of the [T*ype of SCM]* in your ownership located at *[Physical Address]*. An inspection letter with recommended items to be completed was sent to you on*[report letter date]*, allowing 90 days for the completion of those items. The item(s) originally recommended were:

_____
_____
_____
_____

Based on our telephone conversation on *[completion date]*, it was determined that the recommended items have been satisfactorily completed. Continued routine maintenance is a vital part of ensuring the effectiveness of your SCM. TheCity of Maryville Stormwater Department appreciates your cooperation in completing the recommended items within thegiven time frame.

If you should have any further questions or concerns regarding your SCM, please feel free to contact me at (865) 273-3500.

Sincerely,

Inspector's name, Title
Stormwater Department

Jana Brown
Stormwater Program Manager
City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

Final letter – work completed w/ follow up inspection

[Date]
[Contact Name]
[Organization]
[Mailing Address] [City], [State] [Zip]

RE: Facility Inspection Dear [Contact Name]:

On *[site visit date]*, **City of Maryville's Stormwater Department** completed an inspection of the [T*ype of SCM]* in your ownership located at *[Physical Address]*. An inspection letter with recommended/required items to be completed was sent toyou on *[report letter date]* allowing 90 days for the completion of these items. The item*(s)* originally recommended/required were:

_____
_____
_____
_____
_____
_____

On *[follow up date]*, a follow up inspection of your facility was conducted by Stormwater Management. This inspection revealed that the recommended/required items have been satisfactorily completed. Continued routine maintenance andoperational control is a vital part of ensuring the effectiveness of controlling pollutant discharges.

The City of Maryville Stormwater Department appreciates your cooperation in completing the recommended/requireditems within the given time frame. If you should have any further questions or concerns regarding your SCM, pleasefeel free to contact me at (865) 273-3500.

Sincerely,

Inspector's name, Title
Stormwater Department

Jana Brown
Stormwater Program Manager
City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

After 90 days – recommended items not completed

[Date]
[Contact Name]
[Organization]
[Mailing Address] [City], [State] [Zip]

RE: Stormwater Discharge Compliance

Dear [Contact Name]:

On *[site visit date]*, the City of Maryville's Stormwater Department completed an inspection of your facilities located at *[Physical Address]*. An inspection letter with recommended items to be completed was sent to you on *[report letter date]*, allowing 90 days for the completion of those items. The item(s) originally recommended items were:

_____

_____

_____

_____

On *[follow up date]*, a follow up inspection of your facility was conducted by Stormwater Management. This inspection noted that the specified items have not been satisfactorily completed. The City of Maryville may pursue enforcement procedures concerning the above stated items. In accordance with the City of Maryville's Stormwater Management Ordinance, they may also elect to complete the recommended items, and assess the owner for any costs or damages incurred. You will be notified if further action is required.

Routine and maintenance and operational controls including SCMs, is the sole responsibility of the owner and City of Maryville accepts no liability in the event of functional or structural failure. Proper operation and routine maintenance are of vital importance to pollution prevention and effectiveness of SCMs.

If you should have any further questions or concerns regarding your SCM, please feel free to contact me at (865) 273-3500.

Sincerely,

Jana Brown
Stormwater Program Manager
City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

Letter of Compliance and Assessment of Civil Penalty

(CERTIFIED MAIL OR PERSONAL SERVICE)

[Date]
[Contact Name]
[Organization]
[Mailing Address] [City], [State] [Zip]

Dear *[Contact Name]*:

I am responsible for enforcement of the City of Maryville's Stormwater Discharges Ordinance. A copy of this Ordinance is enclosed herein.

It appears from our records that you are the owner of the above property. It further appears that there is a violation on this property of Section(s) 18-501 of the Stormwater Discharges Ordinance (*add Reason for violation*).

You are asked to immediately rectify this situation and cause the property to come into compliance.

Under the City Code, each day of violation constitutes a separate offense and subjects you to additional fines. Accordingly,time is of the essence in getting this matter resolved. When you believe that you have ceased being in violation, please give our office a call so that we can inspect and document whether the situation causing the violation has in fact been cured.

Currently, under the City's Ordinance, you are subject to a civil penalty by the City of not less than Fifty Dollars ($50.00) nor more than Five Thousand Dollars ($5,000.00) per day for each violation. The City may also recover all damagesproximately caused to the City by your violation.

This correspondence serves as **Notice of Violation**, **Letter of Compliance** and **Assessment of Civil Penalty** for thisincident that constituted a violation of section (*add actual Section reference*) of the City of Maryville Stormwater dischargeordinance.

You are hereby assessed a civil penalty of ($$$$) for causing an illicit discharge from the above property. As stated above, this amount is subject to increase based on the time it takes to get this matter resolved. Please make payment in cash or check to the above below within thirty (30) days.

Corrective measures: *(List items to be completed and the timeframe for completion)*

_____
_____
_____
_____
_____

An outline of the corrective actions that will be taken to accomplish the above referenced items must be submitted to thisoffice within (3) days of the receipt of this correspondence and work must be started as soon as possible. Failure to comply may result in further civil penalties and legal actions.

You have the right to appeal within thirty (30) days to the City Council of the City of Maryville as outlined in Section Appeal or review of a civil penalty or damage assessment under this Ordinance shall be made to the City Council of the City of Maryville. Such review must be requested within thirty (30) days after the damage assessment or civil

penalty is servedby filing a written notice of appeal with the City Manager's office. If a petition for review of such damages assessment or civil penalty is not filed within thirty (30) days after the service of this letter and notice, you will have deemed to have consented to the damage assessment or civil penalty and it shall become final. You may appeal the decision of the City Council to the court system.

Please direct any questions regarding this assessment of civil penalty to my office or to our legal counsel, Melanie E. Davis, Telephone: (865) 980-1625.

Sincerely,

Jana Brown
Stormwater Program Manager
City of Maryville
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525
jrbrown@maryville-tn.gov

Appendix E -Template SPAP

City of Maryville, Tennessee
Stormwater Program Management
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3512
Fax (865) 273-3525
jrbrown@maryville-tn.gov

Special Pollution Abatement Permit/Plan (SPAP)

Please Submit Check with Maryville Special Pollution Abatement Permit Date_____Fee $_____

Submit information for application of a Special Pollution Abatement Permit to comply with the following:

1. Enter the legal or official name of the facility. Do not use colloquial name.
2. Give the mailing address and physical location of facility. Determine watershed name, city block number and CLT number.
3. For items a-j below, include the supporting information in the box provided or attach an exhibit labeling which section it is in reference to. Provide complete data in a legible and clearly organized format.
4. Verify that the certification on this permit is read, thoroughly understood, and signed by the appropriate persons.

(1) Name of Facility:	
(2) Mailing Address	
Physical Location:	
Watershed Name:City	
Block Number:	
CLT Number:	

(3) Supporting Information:

a. Name of contact person for permit compliance, including job title, address, and phone numbers. The contact person shall be responsible for keeping records of incidents such as significant spills of toxic pollutants or other discharges which may affect stormwater runoff quality. The contact person shall document and record all inspections and maintenance activities.

STAFF USE ONLY

Date Received:	Reviewer:	
Date of Coverage:	Expiration Date:	Permit Number:

b. Description of facility, nature of work performed, and type of facility.

c. Site map of facility with buildings, parking, drives, materials loading and access areas, dumpsters, type of each impervious surface, ditches, pipes, catch basins, drainage basin limits, area of facility, acreage of offsite water draining onto facility, discharge points to “Waters of the State” or “Community Waters” with name of the water or channel. This map will be a minimum scale of 1"=50'.

d. Submit a plan of instruction provided to employees at all levels within the company in methods to prevent stormwater runoff pollution. The plan shall identify periodic dates for such training and methods used. Submit a site-specific spill protection plan that deals with actual hazardous materials and emergency response equipment at the site.

e. A narrative description of significant materials (as defined by 40 CFR 122.26) that are currently or in the past have been treated, stored or disposed outside; method of onsite storage or disposal; materials management practices used to minimize contact of these materials with stormwater runoff for the past three years; materials loading and access area; material disposal areas, location and description of existing structural and nonstructural control measures to reduce pollutants in stormwater runoff; and a description of any treatment the stormwater receives.

f. Include a record of available sampling data describing pollutants in stormwater discharges. Carefully research using historical data from previous owner/operator, government records, and investigation reports.

g. Include a preventive maintenance program that includes regular inspection and maintenance of all stormwater management devices (such as cleaning grit chambers and catch basins). Maintenance program shall also include inspecting and testing plant equipment and systems to uncover conditions that could potentially cause breakdowns or failures resulting in discharges of pollutants to surface waters or to groundwater.

h. Submit a maintenance schedule of sweeping or vacuuming of facility to prevent washout from deposited emissions laden with hydrocarbons, oxides, salts, metals, worn pavement particulates, hydrocarbons for leaks and spills, trash, debris, garbage, metal, tire particles, brake lining particles and various chemicals from the wear and deterioration of vehicles. In the event of remedial work or action, submit a cleanup schedule for debris or material storage areas.

i. Description of other ways the facility plans to implement programs to reduce the discharge of pollutants into stormwater runoff. Provide estimated quantity of stormwater flow, direction of flow, and an estimate of the types of pollutants which are likely to be present in stormwater discharges associated with industrial activity for each area of the facility. Designate each area of the facility as having high, medium or low potential for stormwater pollution and explain rationale.

j. Include plans, details and specifications that show construction of new structures to protect discharge outfalls into "Waters of the State" or into "Community Waters". Common examples include an appropriately-sized grit chamber, oil skimmer, oil/water separator, media filtration inserts, etc. Vegetative measures such as grassed swales, constructed wetlands, existing woods or a detention basin are commonly used to supplement structural measures.

(4) Certification and Signatures:

Certification and Signature (Must Be Signed by President, Owner, or Ranking Official)

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and attached exhibits. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine or imprisonment."

Printed Name: _____Title:_____

Signature:_____Date: _____

Acceptance of Responsibility for Permit Compliance
(Must be Signed by Contact Person)

"I also certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and attached exhibits. Based on my investigations, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine or imprisonment."

Printed Name: _____Title:_____

Signature:_____Date: _____

a. Some facilities which are not yet constructed may not have selected a permanent contact person who will ultimately be responsible for permit compliance. In these instances, the contact person may be a technical person within the company who is generally responsible for environmental compliance issues.

b. The president, owner, or other ranking official who certifies this document is responsible for keeping the City of Maryville up-to-date concerning the name of the contact person. The president, owner, or other ranking official who certifies this document is also responsible for notifying the City of Maryville if he is no longer an official with the company.

If any information changes or is subsequently found to be in error, please resubmit necessary pages of the Special Pollution Abatement Permit application along with new signatures and dates.

Permit expires five years from the date of issuance, or as noted on the first page of this permit.

Submit this permit application promptly to the Stormwater Manager at the following address:
City of Maryville, Tennessee
Stormwater Program Management
416 West Broadway
Maryville, TN 37801
Phone (865) 273-3500
Fax (865) 273-3525

Appendix F - List of Acronyms

BMP	Best Management Practice
EPA	U.S. Environmental Protection Agency
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
OBM	Optical brightener monitoring
PVC	polyvinyl chloride
SCA	Stream Corridor Assessment
SCM	Stormwater Control Measure
SOP	Standard Operating Procedure
SPAP	Special Pollution Abatement Plan
TDEC	Tennessee Department of Environment & Conservation
TMDL	Total Maximum Daily Load
TSS	total suspended solids