



Weston & SampsonSM

westonandsampson.com

55 Walkers Brook Drive
Reading, MA 01867
tel: 978.532.1900

ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN

MS4 GENERAL PERMIT COMPLIANCE

JUNE 2019

TOWN OF
Hamilton
MASSACHUSETTS



idde

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1.0 INTRODUCTION

1.1 MS4 Program

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed by the Town of Hamilton to address the requirements of the 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) set forth by the United States Environmental Protection Agency (USEPA). The permit effective date was July 1, 2018.

Under the MS4 permit, Hamilton is required to employ best management practices for the six minimum control measures in an effort to reduce the discharge of pollutants from the MS4 to the maximum extent practicable. The measures are as follows:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management); and
6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations.

As part of Minimum Control Measure No. 3, Illicit Discharge Detection and Elimination (IDDE), the Town is required to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. This includes, but is not limited to, the following measures:

1. Developing a comprehensive map of the Town's drainage system that builds upon the outfalls and receiving waters that were previously mapped under the 2003 MS4 Permit.
2. Ensuring that appropriate regulatory mechanisms and enforcement procedures, as required under the 2003 MS4 Permit, are in place to prohibit illicit discharges.
3. Developing and implementing a written plan to detect and eliminate illicit discharges, which references the Town's authority to implement all aspects of the IDDE program, clearly identifies responsibilities with regard to eliminating illicit discharges, and outlines written procedures for dry and wet weather outfall screening and sampling and catchment investigations.
4. Providing training annually to employees involved in the IDDE program about the program, including how to recognize illicit discharges and SSOs.

Hamilton has developed an IDDE Plan, outlined in this section and associated appendices, to address these requirements.

1.2 Purpose of the Plan

The MS4 Permit defines an illicit discharge as “any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES Permit (other than the MS4 Permit) and discharges resulting from fire-fighting activities.”

The following categories of non-stormwater discharges are allowed under the MS4 Permit unless the Town, EPA, or the MassDEP identifies any category or individual discharge of non-stormwater discharge identified below as a significant contributor of pollutants to the MS4, then that category or individual discharge is not allowed, and shall be deemed an “illicit discharge” that must be addressed as part of the Town’s Illicit Discharge Detection and Elimination (IDDE) Program.

1. Water line flushing
2. Landscape irrigation
3. Diverted stream flows
4. Rising ground water
5. Uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(20))
6. Uncontaminated pumped ground water
7. Discharge from potable water sources
8. Foundation drains
9. Air conditioning condensation
10. Irrigation water, springs
11. Water from crawl space pumps
12. Footing drains
13. Lawn watering
14. Individual resident car washing
15. Flows from riparian habitats and wetlands
16. De-chlorinated swimming pool discharges
17. Street wash waters
18. Residential building wash waters without detergents

Discharges or flows from firefighting activities are also allowed under the MS4 Permit and need only be addressed where they are identified as significant sources of pollutants to waters of the United States.

Illicit discharges could be categorized as: a fixed-point source, such as illegal/improper sanitary or floor drain connections; isolated or recurring discharges, such as illegal dumping and improper disposal of waste from boats/campers; or indirect sources, such as cracks/defects in the infrastructure that allow infiltration into the drainage system.

Illicit discharges result in contamination of the drainage system and the subsequent discharge of pollutants to the environment. Efforts should be made to identify and remove illicit discharges to the drainage system through development and implementation of a comprehensive IDDE Plan.

The purpose of this IDDE Plan is to remove pollutants from the stormwater discharged from municipal outfalls by identifying and allowing for elimination of illicit discharges to the drainage infrastructure tributary to the outfalls. The focus of the Plan is primarily the identification of fixed-point source discharges; however, some isolated/recurring direct, as well as indirect sources will likely be identified during the investigation.

1.3 Development of the Plan

1.3.1 Mapping

Hamilton is required to build upon the outfall and receiving waters map that was required under the 2003 MS4 Permit. The revised map shall be completed in two phases as outlined below and is intended to facilitate the identification of key infrastructure and factors influencing proper system operation, and the potential for illicit discharges.

Phase 1: The system map is required to be updated within two (2) years of the permit effective date (July 1, 2020) to include the following:

- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally-owned stormwater treatment structures (e.g. detention and retention basins, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other proprietary systems.)
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA approved Massachusetts Integrated List of Waters report pursuant to Clean Water Act sections 303(d) and 305(b).
- Initial catchment delineations. A catchment is the area that drains to an individual outfall or interconnection. Topographic contours and drainage system information may be used to produce initial catchment delineations.

Phase 2: The system map shall also be updated annually as the following information becomes available during implementation of catchment investigation procedures. This information must be included in the map for all outfalls within ten (10) years of the permit effective date:

- Outfall spatial location (latitude and longitude with a minimum accuracy of +/- 30 ft)
- Pipes
- Manholes
- Catch basins
- Refined catchment delineations. Catchment delineations shall be updated to reflect information collected during catchment investigations

The following are recommended elements to be included in the system map as information becomes available:

- Storm sewer material, size (pipe diameter) and age
- Privately owned stormwater treatment structures
- Properties known or suspected to be served by a septic system, especially in high-density urban areas
- Area where the permittee's MS4 has received or could receive flow from septic system discharges (e.g., areas with poor soils, or high ground water elevations unsuitable for conventional subsurface disposal systems)
- Seasonal high-water table elevations impacting sanitary alignments
- Topography

- Orthophotography
- Alignments, dates and representation of work completed (with legend) of past illicit discharge investigations (e.g., flow isolation, dye testing, CCTV)
- Locations of suspected, confirmed and corrected illicit discharges (with dates and flow estimates).

The mapping will serve as a planning tool for the implementation and phasing of the Town's IDDE Program and demonstration of the extent of complete and planned investigations and corrections. The Town will update their mapping as needed to reflect newly discovered information and required corrections or modifications. The Town will report annually on the progress toward completion of the system map in their MS4 Annual Report.

1.3.2 *Municipal Infrastructure*

Hamilton already has in place a comprehensive drainage GIS. In addition to mapping known outfalls and receiving waters as required by the 2003 MS4 Permit, the Town has also mapped much of their remaining MS4 infrastructure including storm drain manholes, catch basins, and drainage pipes. The Town's existing drainage map, which will be updated annually, is included in Appendix A.

1.3.3 *Non-Municipal Infrastructure*

Hamilton has reviewed drainage infrastructure within town boundaries to determine ownership. Private infrastructure or infrastructure owned and operated by another municipality or a state entity has been determined and designated in the Town's drainage GIS. Hamilton currently has interconnections with MassDOT along Route 1A.

1.4 **Receiving Waters and Impairments**

Table 1-1 lists impaired waters, based on the 2014 Massachusetts Integrated List of Waters developed by MassDEP, that are either located within the boundaries of Hamilton's regulated area. The 2014 Massachusetts Integrated List of Waters is the most recently approved list. A water body is impaired if it does not meet one or more of its designated use(s). For purposes of the MS4 Permit, "impaired" refers to categories 4 and 5 of the five-part categorization approach used for classifying the water quality standards attainment status for water segments under the TMDL program. Impaired waters compilations are also sometimes referred to as "303(d) lists." Category 5 waters are impaired because at least one designated use is not being supported or is threatened and a TMDL is needed. Category 4 waters indicate that at least one designated use is not being supported but a TMDL is not needed (4a indicates that a TMDL has been approved or established by EPA; 4b indicates other required control measures are expected in result in the attainment of water quality standards in a reasonable period of time; and 4c indicates that the non-attainment of the water quality standard is the result of pollution (e.g. habitat) and is not caused by a pollutant).

Water Body Name	Segment ID	Impairment(s)	Approved TMDL
Chebacco Lake-Hamilton/Essex	MA93014	(Non-Native Aquatic Plants*), Mercury in Fish Tissue	Mercury in Fish Tissue
Miles River-Outlet Longham Reservoir, Beverly to confluence with Ipswich River, Ipswich	MA92-03	Aquatic Macroinvertebrate Bioassessments, Fecal Coliform, Dissolved Oxygen	-

*TMDL not required (non-pollutant).

All impaired water bodies are shown on the map of the Town’s drainage system included in Appendix A.

1.5 IDDE Program Goals

The goals of Hamilton’s IDDE program are to find and eliminate illicit discharges to the Town’s municipal separate storm system and prevent illicit discharges in the future. The program consists of the following components:

- Legal authority and regulatory mechanism to prohibit discharges and enforce this prohibition
- Storm system mapping
- Inventory and ranking of outfalls
- Dry weather outfall screening
- Wet weather sampling
- Catchment investigations
- Identification/confirmation of illicit sources
- Illicit discharge removal
- Follow-up screening
- Employee training

A base timeline for each of these goals, set forth by the permit, is shown in Table 1-2.

IDDE Program Requirement	Completion Date from Effective Date of Permit					
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years
IDDE Regulatory Mechanism or Bylaw (adopted under the 2003 MS4 Permit)						
Written IDDE Program Plan	X					
SSO Inventory	X					

Table 1-2: Milestones for IDDE Program Implementation

IDDE Program Requirement	Completion Date from Effective Date of Permit					
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years
Written Catchment Investigation Procedure		X				
Phase I Mapping			X			
Phase II Mapping						X
Dry Weather Outfall Screening and Sampling (<i>following initial ranking presented in Section 3</i>)				X		
Follow-up Ranking of Outfalls and Interconnections				X		
Catchment Investigations – Problem Outfalls (<i>to begin no later than two (2) years from permit effective date</i>)					X	
Catchment Investigations – Likely Sewer Input (<i>where dry weather outfall/interconnection sampling indicates likely sewer input</i>)					X	
Catchment Investigations – High and Low Priority Outfalls (<i>to follow ranking presented in Section 3</i>)						X
Wet Weather Screening and Sampling						X

2.0 AUTHORITY AND RESPONSIBLE PARTIES

2.1 Legal Authority

The Town of Hamilton originally adopted Chapter XXIX, Stormwater Management & Chapter XXX Illicit Discharge Detection and Elimination, to the Town's General Bylaws at Town Meeting on October 22, 2007. The IDDE bylaw was later further amended at Town Meeting on October 30, 2010. This chapter of the Town's bylaws prohibits illicit discharges and connections to the municipal storm drain system. A copy of this bylaw is provided in Appendix B. This bylaw provides the Town of Hamilton with adequate legal authority to accomplish the following:

- Prohibit illicit discharges.
- Investigate suspected illicit discharges.
- Eliminate illicit discharges, including discharges from properties not owned by or controlled by Hamilton that discharge into the MS4 system.
- Implement appropriate enforcement procedures and actions.

The Hamilton Department of Public Works has the authority to administer, implement and enforce this bylaw.

2.2 Responsible Parties

The Department of Public Works/Director is the lead person responsible for implementing the IDDE program pursuant to the provisions of Chapter XXX, Illicit Discharge Detection and Elimination By-Law, which covers illicit discharges and connections. Other agencies, departments, or personnel with responsibility for aspects of the program include:

Department/Title	Responsibilities
Department of Public Works /Director	Overall IDDE Program Implementation Conducts Annual IDDE Training Oversees the Monitoring and Repair of Storm Drain Systems Oversees Mapping Updates in GIS Administration/Implementation/Enforcement Actions Oversees Reporting of Citizen Service Requests; Maintain Drainage System Geodatabase & Mapping
Health Department/ Inspector	Oversees Title V Septic System Inspections, Repairs & Construction
Building Department/ Inspector	Plumbing Code Enforcement

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3.0 CATCHMENT DELINEATION AND PRIORITY RANKING & CLASSIFICATION OF OUTFALLS/CATCHMENTS/INTERCONNECTIONS

The MS4 Permit requires an assessment and priority ranking of catchments in terms of their potential to have illicit discharges, and other factors, related to public health. The ranking will determine the priority order for field screening of the outfalls and interconnections. Priority catchments will be investigated for evidence of illicit discharges. The ranking of catchments provides the basis for determining permit milestones as certain catchments need to be investigated by certain years of the Permit depending on their classification.

3.1 Catchment Delineations

A catchment is the land area that drains to an outfall or interconnection. The extent of an outfall's catchment is determined not only by localized topography and impervious cover but also by the location of drainage structures and the connectivity of MS4 pipes. The catchment delineation process considered each catch basin upstream from the outfall or interconnection and the area that would conceivably drain to that catch basin based on topography and impervious cover. As drainage infrastructure mapping becomes more complete over the course of the investigations performed throughout the permit term, this exercise will be refined and updated. Once the catchments were delineated, they were assessed for potential illicit discharges based upon the presence of relevant factors outlined in the MS4 Permit.

3.2 Initial Ranking

The Town completed an initial inventory and priority ranking to assess the illicit discharge potential of each regulated catchment and the related public health significance. The ranking will determine the priority order for screening of outfalls and interconnections, catchment investigations for evidence of illicit discharges, and provide the basis for determining permit milestones. This inventory and ranking will be updated annually throughout the permit term to reflect new findings from dry and wet-weather sampling and other IDDE program activities and will be included in the Town's MS4 Annual Report.

Outfalls and interconnections are classified into one of the following categories:

1. **Problem Outfalls**: Outfalls/Interconnections with known or suspected contributions of illicit discharges based on existing information. This includes any outfalls/interconnection where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:
 - a. Olfactory or visual evidence of sewage;
 - b. Ammonia \geq 0.5 mg/L, surfactants \geq 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
 - c. Ammonia \geq 0.5 mg/L, surfactants \geq 0.25 mg/L, and detectable levels of chlorine.

Problem outfalls do not require dry weather screening.

2. **High Priority Outfalls**: Outfalls/interconnections that are not problem outfalls but do meet either of the following criteria:

- a. Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds;
 - b. Have been determined by the Town as high priority based upon the criteria included under the ranking rationale.
 - c. Outfalls discharging to water bodies that are impaired for bacteria are being ranked as High in accordance with Appendix H of the MS4 permit.
3. **Low Priority Outfalls:** Outfalls/interconnections determined by the Town as low priority based upon the criteria included under the ranking rationale.
4. **Excluded Outfalls:** Outfalls/interconnections with no potential for illicit discharges. Catchments that only include:
- a. Roadway drainage in undeveloped areas with no dwellings;
 - b. Drainage for athletic fields, parks or undeveloped green space and associated parking without services; and
 - c. Cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

3.3 Ranking Rationale

The Town is required to priority rank outfalls within each category (except for Excluded Outfalls), based on the following characteristics of the initial catchment area. The Town is required to, at a minimum, consider the following screening factors where relevant:

- Past discharge complaints and reports.
- Poor receiving water quality- the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding water quality standards for bacteria; ammonia levels above 0.50 mg/l; surfactants levels greater than or equal to 0.25 mg/l.
- Density of generating sites - Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
- Surrounding density of aging septic systems – Septic systems 30 years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.
- Culverted streams – any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
- Water quality limited waterbodies that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.
- Additional relevant characteristics, including location-specific characteristics.

In order to rank all regulated catchment areas in Hamilton, the Town assessed each catchment based on the following criteria using the rationale discussed:

1. Past discharge complaints and reports.

Rationale for Ranking: Complaints most commonly result from visual or olfactory observations, which are the easiest illicit discharges to find. They offer the highest potential for finding and eliminating illicit discharges as quickly as possible.

2. Poor dry weather receiving water quality-the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding water quality standards for bacteria; ammonia levels above 0.50 mg/l; or surfactants levels greater than or equal to 0.25 mg/l.

Rationale for Ranking: Poor in-stream water quality is a good indicator of pollutant sources associated with illicit discharges, especially if there are identified hot spots. However, this priority requires the availability of existing in-stream data for the pollutants of concern, which is not available from the Town.

3. Density of aging septic systems – Septic systems 30 years or older in residential land use areas.

Rationale for Ranking: Failing septic systems discharge higher pollutant loads into the ground, which in turn, can migrate into nearby drainage infrastructure. 100% of Hamilton is currently served by septic systems. The Town does not have this information readily available at this time.

4. Culverted streams – Any river or stream that is culverted for distances greater than a simple roadway crossing may be considered “high” potential.

Rationale for Ranking: Culverts are only a concern if there are MS4 discharges located inside the culvert. The Town’s stormwater system map will allow these locations to be identified and prioritized.

5. Water quality limited waterbodies that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

Rationale for Ranking: For Hamilton, this includes waters impaired for bacteria. The Miles River is impaired for fecal coliform.

6. The permittee may add additional relevant factors, including location-specific screening factors.

Rationale for Ranking: At this time, there are no other relevant factors for screening in Hamilton that have not already been addressed under the list above. Should a new factor be identified, an appropriate priority will be assigned.

Appendix C provides a comprehensive table of all regulated catchments and interconnections within Hamilton. This table identifies the applicability of relevant screening factors to a particular catchment. All screening factors are weighted, and each catchment is prioritized and ranked according to those screening factors. Table 3.1 provides a breakdown of those outfalls by category.

Table 3-1: Catchment Priority Ranking by Category	
Category	Relevant Outfalls
Problem Outfalls	None
High Priority Outfalls	OF-22, OF-23, OF-5003, OF-5004, OF-5010, OF-5011, OF-5013, OF-5016, OF-5018, OF-5021, OF-5022, OF-5025, OF-5069, OF-5071, OF-6668
Low Priority Outfalls	OF-4, OF-6, OF-8, OF-9, OF-10, OF-11, OF-13, OF-14, OF-15, OF-16, OF-17, OF-18, OF-32, OF-39, OF-40, OF-41, OF-42, OF-45, OF-47, OF-50, OF-53, OF-58, OF-61, OF-62, OF-64, OF-65, OF-70, OF-71, OF-72, OF-73, OF-74, OF-75, OF-78, OF-79, OF-81, OF-83, OF-5002, OF-5006, OF-5008, OF-5014, OF-5015, OF-5038, OF-5040, OF-5041, OF-5042, OF-5044, OF-5045, OF-5047, OF-5048, OF-5050, OF-5077, OF-5080, OF-5082, OF-5083, OF-5089, OF-5090, OF-5091, OF-5094, OF-5100, OF-5101, OF-5102, OF-5106, OF-5107, OF-5109, OF-5110, OF-5113, OF-5118, OF-5120, OF-5121, OF-5129, OF-5143, OF-5152, OF-5153, OF-5155, OF-6583, OF-6798, OF-6587, OF-6750, OF-6741, OF-6112, OF-6205, OF-6204, OF-6159, OF-6365
Excluded Outfalls	—

Also included in Appendix C is a copy of the Town’s drainage map with the delineated catchments.

4.0 DRY WEATHER SCREENING AND SAMPLING

The MS4 Permit requires screening and sampling of all regulated outfalls and interconnections (with the exception of Problem and Excluded Outfalls) from the MS4 during dry weather conditions for evidence of illicit discharges by June 30, 2021. All outfalls and interconnections are to be screened in accordance with their initial ranking as included in Appendix C. The DPW Director is responsible for facilitating the Town's dry weather outfall and interconnection screening and sampling efforts.

4.1 Dry Weather Criteria

Dry weather screening and sampling shall proceed when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snow-melt is occurring. If these conditions are met, then the Town of Hamilton will proceed with dry weather screening and sampling per the methodology outlined in Section 4.2.

4.2 Sampling Parameters and Methodology

4.2.1 General Procedure

Dry weather sampling shall follow these general steps:

1. Identify outfall(s) and interconnection(s) to be screened/sampled based on initial outfall inventory and priority ranking.
2. Acquire the necessary staff, mapping, and field equipment.
3. Conduct the outfall inspection during dry weather:
 - a. Mark and photograph the outfall.
 - b. Record the inspection information and outfall characteristics including:
 - i. Unique identifier,
 - ii. Receiving water,
 - iii. Date of most recent inspection,
 - iv. Dimensions,
 - v. Shape,
 - vi. Material (concrete, PVC),
 - vii. Spatial location (latitude and longitude with a minimum accuracy of +/- 30 feet,
 - viii. Physical condition
 - c. Look for and record visual/olfactory evidence of non-stormwater discharges in flowing outfalls including odor, color, turbidity, floatable matter (suds, bubbles, excrement, toilet paper or sanitary products) and oil sheen. Also observe outfalls for deposits and stains, vegetation, and damage to outfall structures.
4. If flow is observed, sample and test the flow following the procedures described in the following sections.
5. If an outfall/interconnection is inaccessible or submerged, either partially or completely, proceed to the first accessible upstream manhole or structure for observation and sampling and report the location with the screening results. Field staff shall continue to the next upstream structure until there is no longer an influence from the receiving water on the visual inspection or sampling.

6. If no flow is observed, but evidence of illicit flow exists (illicit discharges are often intermittent or transitory), revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow. Other techniques can be used to detect intermittent or transitory flows including conducting inspections during evenings or weekends.
7. Input results from screening and sampling into spreadsheet/database. Update the catchment and priority ranking matrix accordingly.
8. Include all screening data in the Town's MS4 Annual Report.

4.2.2 Sample Collection

If flow is observed during dry weather conditions and a sample can be isolated, the sample shall be collected to test for the following parameters:

- Ammonia
- Surfactants (such as MBAS)
- Chlorine
- Conductivity
- Temperature
- Salinity
- E. Coli (*freshwater receiving water*)
- Pollutants of concern where the outfall or interconnection discharges directly into a water quality limited water or a water subject to an approved TMDL

Where an outfall or interconnections discharges directly into a water quality limited water or a water subject to an approved TMDL, the parameters identified in Table 4-1 must also be sampled based on the identified impairment as stated in Appendix G of the MS4 Permit.

Benchmark criteria for each parameter is included in Section 4.5.

Table 4-1: Sampling Parameters Specific to Pollutants of Concern

Water Body Name	Segment ID	Impairment(s)	Required Sampling Parameters	Applicable Outfalls & Interconnections
Miles River	MA92-03	Aquatic Macroinvertebrate Bioassessments, Fecal Coliform, Dissolved Oxygen	Dissolved oxygen, Temperature, BOD ₅ , and Total Phosphorus <i>(Per EPA, testing fecal coliform is not required when the Town will be testing for E.coli and/or Enterococci)</i>	OF-2, OF-22, OF-23, OF-5021, OF-5022, OF-5024, OF-5025, OF-5069, OF-5071

The general procedure for collection of outfall samples is as follows:

1. Fill out all sample information on sample bottles and field sheets.
2. Put on protective gloves (nitrile/latex/other) before sampling.
3. Collect sample with dipper or directly in sample containers. If possible, collect water from the flow directly in the sample bottle. Be careful not to disturb sediments.
4. If using a dipper or other device, triple rinse the device with distilled water and then in water to be sampled (not for bacteria sampling).
5. Use test strips, test kits, and field meters for most parameters.
6. Place laboratory samples on ice for analysis of bacteria and pollutants of concern.
7. Fill out chain-of-custody form (Appendix D) for laboratory samples.
8. Deliver samples to EPA-approved laboratory.
9. Dispose of used test strips and test kit ampules properly.
10. Decontaminate all testing personnel and equipment.

4.3 Required Field Equipment

The following equipment shall be used during general field investigations:

Table 4-2: Recommended Field Equipment for IDDE Investigations	
Equipment	Use/Notes
Clipboard	For organization of field sheets and writing surface
Field Sheets	Field sheets for both dry weather inspection and Dry weather sampling should be available with extras
Chain of Custody Forms	To ensure proper handling of all samples
Pens/Pencils/Permanent Markers	For proper labeling
Nitrile Gloves	To protect the sampler as well as the sample from contamination
Flashlight/headlamp w/batteries	For looking in outfalls or manholes, helpful in early mornings as well
Cooler with Ice	For transporting samples to the laboratory
Digital Camera	For documenting field conditions at time of inspection
Personal Protective Equipment	Reflective vest, Safety glasses and boots at a minimum
GPS	For taking spatial location data
Water Quality Sonde	If needed, for sampling conductivity, temperature, pH
Water Quality Meter	Hand held meter, if available, for testing for various water quality parameters such as ammonia, surfactants and chlorine
Test Kits	Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day
Label Tape	For labeling sample containers
Sample Containers	Make sure all sample containers are clean. Keep extra sample containers on hand at all times. Make sure there are proper sample containers for what is being sampled for (i.e., bacteria analysis requires sterile containers).
Pry Bar or Pick	For opening catch basins and manholes when necessary
Sandbags	For damming low flows in order to take samples
Small Mallet or Hammer	Helping to free stuck manhole and catch basin covers
Utility Knife	Multiple uses

Measuring Tape	Measuring distances and depth of flow
Safety Cones	Safety
Hand Sanitizer	Disinfectant/decontaminant
Zip Ties/Duct Tape	For making field repairs
Rubber Boots/Waders	For accessing shallow streams/areas
Sampling Pole/Dipper	For accessing hard to reach outfalls and manholes

4.4 Guidelines for Sampling Analysis

All analyses, with the exception of indicator bacteria and pollutants of concern, can be performed with field test kits or instrumentation and are not subject to 40 CFR Part 136 requirements. The following guidelines shall be used during sample analysis:

Table 4-3: Outfall Screening Sampling Parameters and Analytical Methodology						
Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	EPA: 350.2, SM: 4500-NH3C	0.20 mg/L	28 days	Cool $\leq 6^{\circ}\text{C}$, H_2SO_4 to pH <2, No preservative required if analyzed immediately	CHEMetrics™ V-2000 Colorimeter Hach™ DR/890 Colorimeter Hach™ Pocket Colorimeter™ II	CHEMetrics™ K-1410 CHEMetrics™ K-1510 (series) Hach™ NI-SA Hach™ Ammonia Test Strips
Surfactants	SM: 5540-C	0.10 mg/L	48 hours	Cool $\leq 6^{\circ}\text{C}$	CHEMetrics™ I-2017	CHEMetrics™ K-9400 and K-9404 Hach™ DE-2
Chlorine	SM: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required	CHEMetrics™ V-2000, K-2513 Hach™ Pocket Colorimeter™ II	N/A
Temperature	SM: 2550B	N/A	Immediate	None Required	YSI Pro30 YSI EC300A Oakton 450	N/A
Specific Conductance	EPA: 120.1, SM: 2510B	0.2 $\mu\text{s}/\text{cm}$	28 days	Cool $\leq 6^{\circ}\text{C}$	CHEMetrics™ I-1200 YSI Pro30 YSI EC300A Oakton 450	N/A
Salinity	SM: 2520B	0.04 ppt	28 days	Cool $\leq 6^{\circ}\text{C}$	YSI Pro30 YSI EC300A Oakton 450	N/A
E.coli	EPA: 1603 SM: 9221B, 9221F, 9223B Other: Colilert®, Colilert-18®	EPA: 1 cfu/100mL SM: 10 MPN/100mL Other: 1 MPN/100mL	6 hours	Cool $\leq 6^{\circ}\text{C}$, 0.0008% $\text{Na}_2\text{S}_2\text{O}_3$ (sodium thiosulfate)	EPA certified laboratory procedure (40 CFR § 136)	N/A

Dissolved Oxygen	SM: 4500-O-G	N/A	Immediate	Cool ≤6°C,	EPA certified laboratory procedure (40 CFR § 136)	N/A
Total Phosphorus	EPA: Manual-365.3, Automated Ascorbic acid digestion-365.1 Rev. 2, ICP/AES4-200.7 Rev. 4.4 SM: 4500-P E-F	EPA: 0.01 mg/L SM: 0.02 mg/L	28 days	Cool ≤6°C, H ₂ SO ₄ to pH <2	EPA certified laboratory procedure (40 CFR § 136)	N/A
BOD ₅	SM: 5210B	8 mg/L	48 hours	Cool ≤6°C,	EPA certified laboratory procedure (40 CFR § 136)	N/A

EPA = EPA Methods; SM = Standard Methods

All screening data collected will be submitted each year to EPA in the Town's MS4 Annual Report.

4.5 Benchmark Criteria for Selected Parameters for Outfall Sampling

The “benchmark” criteria included in Table 4-4 will be used to assess whether a contaminant concentration is above Water Quality Standards, or in the absence of a regulatory standard, industry-accepted concentrations based on typical characteristics of surface water and wastewater. High concentrations of ammonia are typically found in wastewater, and abnormal chlorine, temperature, or specific conductance also indicates the influence of wastewater. Escherichia Coliform is an indicator of contamination from the excrement of humans and primarily used in freshwater. High concentrations of surfactants generally indicate the presence of detergents, such as from clothing or car washing.

Table 4-4: Benchmark Criteria for Outfall Sampling	
Parameter	Benchmark
Ammonia-Nitrogen	>0.5 mg/L
Specific Conductance	>2,000 μs/cm
Escherichia Coliform	235 cfu/100mL
Surfactants	>0.25 mg/L
Total Chlorine	>0.02 mg/L
Temperature (Class-A)	>83°F (>28.3°C)
Dissolved Oxygen	>5.0 mg/L
BOD ₅	10 mg/L ⁽¹⁾
Phosphorus	>0.1 mg/L

1) A placeholder has been included here based on available literature. DEP has indicated that they will be providing additional guidance regarding benchmark criteria for parameters included in Appendix G of the 2016 MS4 Permit.

The following include likely sewer input indicators:

- Ammonia \geq 0.5 mg/L, surfactants \geq 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia \geq 0.5 mg/L, surfactants \geq 0.25 mg/L, and detectable levels of chlorine.

4.6 Follow-up Ranking of Outfalls and Interconnections

Following the collection and analysis of dry weather sampling results, the town will update their outfall and interconnection ranking to reprioritize outfalls and interconnections based on information gathered during dry weather screening. For those outfalls/interconnections where relevant information was found indicating sewer input to the MS4 or sampling results indicate sewer input to the MS4, the outfalls/interconnections shall be ranked at the top of the High Priority Outfalls category for investigation. The ranking will be updated continuously as dry weather screening information becomes available, but no later than June 30, 2021.

5.0 WET WEATHER SAMPLING

The MS4 Permit requires screening and sampling of all regulated outfalls and interconnections from the MS4, which have at least one System Vulnerability Factor, during wet weather conditions for evidence of illicit discharges and SSOs by June 30, 2028. The DPW Director is responsible for facilitating the Town's wet weather outfall and interconnection screening and sampling efforts.

5.1 Wet Weather Criteria

Wet weather screening and sampling shall occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall. There is no specific rainfall amount that will trigger sampling. Sampling during the initial period of discharge ("first flush") will be avoided. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.

5.2 System Vulnerability Factors

For each catchment being investigated, the Town has taken into consideration relevant mapping, as well as historic plans and records, where available, to identify areas within each catchment with a higher potential for illicit connections. Information reviewed includes:

- Record drawing information related to storm drain system construction to determine age of infrastructure and evaluate storm alignments
- Health Department or other municipal data on septic system age and failures or required upgrades

EPA also recommends that the Town include the following in their consideration of System Vulnerability Factors:

- Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance); and
- History of multiple Board of Health actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

Outfalls/interconnections with a minimum of one SVF are subject to wet-weather sampling requirements.

The Town completed a review to identify areas within each catchment with higher potential for illicit connections based on the presence of SVFs that indicate a risk of septic system inputs to the Town's MS4 under wet weather conditions. SVFs that were analyzed and their applicability to Hamilton include:

1. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

Rationale for Ranking: 100% of the Town is currently served by septic systems. The Town provided Title 5 septic system failure data and when/if the system was repaired.

2. History of multiple Board of Health actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

Rationale for Ranking: Although this source might be identified during dry-weather, elevated groundwater elevations may increase the migration of pollutants from failing septic systems. 100% of the properties within Hamilton are served by septic systems.

Appendix C includes a table summarizing all regulated catchments within Hamilton and identifies those SVFs applicable to each catchment. This documentation shall be included in the Town's MS4 Annual Report.

5.3 Required Procedures for Wet Weather Sampling

Where a minimum of one (1) SVF is identified, a wet weather investigation must also be conducted at the associated outfall or interconnection. Outfalls will be inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in groundwater in areas served by septic systems result in discharges to the MS4. Wet weather outfall sampling will proceed as follows:

1. At least one wet weather sample will be collected at each outfall or interconnection for the same parameters required during dry weather screening as identified in Section 4.2.2. This includes any applicable pollutants of concern as listed in Table 4-1. Sample collection procedures shall follow those procedures outlined in Section 4.2.2. Field equipment to be utilized in wet weather sampling shall be as outlined in Section 4.3. Sampling analyses for wet weather samples shall follow the methodologies outlined in Section 4.4.
2. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall.
 - a. There is no specific rainfall amount that will trigger sampling
 - b. Sampling during the initial period of discharge ("first flush") will be avoided.
 - c. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.
3. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in Section 6.0.

4. If wet weather outfall sampling does not identify evidence of illicit discharges, and no evidence of an illicit discharge is found during dry weather manhole inspections, investigation of that particular catchment will be considered complete.
5. Wet weather sampling will be performed upon completion of any dry weather investigation and before any catchment investigation is marked as complete.

6.0 CATCHMENT INVESTIGATION METHODOLOGY

Each catchment, irrespective of outfall and interconnection sampling results or whether evidence of an illicit discharge is observed at the outfall, must be inspected and investigated with the exception of excluded catchments. Investigation of catchments shall proceed in accordance with the catchment ranking described in Section 3 and identified in Appendix C, with problem outfalls being investigated first. This section outlines a systematic procedure to investigate outfall catchments and identify the source(s) of potential illicit discharges. Information and data collected as part of the catchment investigations will be reported in each Annual Report.

6.1 Manhole Inspection Methodology

The MS4 Permit requires the Town to develop a storm drain network investigation that involves systematically and progressively observing, sampling and evaluating key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges. The manhole inspection methodology may either start from the outfall and work up the system or start from the upper parts of the catchment and work down the system or be a combination of both practices. Either method must, at a minimum, include an investigation of each key junction manhole within the MS4, even where no evidence of an illicit discharge is observed at the outfall.

The DPW Director will be responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information will be incorporated into the storm system map, and catchment delineations will be refined based on the field investigation, where necessary. The SVF inventory will also be updated based on information obtained during the field investigations, where necessary.

Several important terms related to the dry weather manhole inspection program are defined by the MS4 Permit as follows:

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.
- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all regulated catchments, during dry weather, field crews will systematically inspect **key junction manholes** for evidence of illicit discharges and confirm or identify potential system vulnerability factors. Progressive inspection and sampling at manholes in the storm drain network will be used to isolate and eliminate illicit discharges.

The manhole inspection methodology will be conducted in one of two ways (or a combination of both):

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- By working progressively up from the outfall and inspecting key junction manholes along the way, or
- By working progressively down from the upper parts of the catchment toward the outfall and inspecting key junction manholes along the way.

For most catchments, manhole inspections will proceed from the outfall moving up into the system. The decision to move up or down the system depends on the drainage system, the surrounding land use and the availability of information on the catchment and drainage system. When an illicit discharge is detected at an outfall, moving up the system can begin immediately with only a map of the storm drain system. Moving down the system requires more advance preparation and reliable drainage system information on the upstream segments of the storm drain system but may be more efficient if the sources of illicit discharges are believed to be located in the upstream portions of the catchment area. Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment.

Inspection of key junction manholes will proceed as follows:

- During a dry weather period, manholes will be opened and inspected for visual and olfactory evidence of illicit connections (e.g. excrement, toilet paper, gray filamentous bacterial growth, or sanitary products present). A sample field inspection form is provided in Appendix E.
- For structures observed to have dry-weather flow, the estimated quantity and visual characteristics such as color, odor, solids, or turbidity will also be documented. In key locations observed to have dry-weather flow, grab samples will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants with test kits or sent to a laboratory to be tested. Additional indicator sampling may also be used to assist in determining potential sources.
- Where sampling results or visual or olfactory evidence indicate potential illicit discharges, the area draining to the junction manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources. Further investigation of the drainage system will be stopped until such time as all illicit discharges to that drain segment are identified and removed, and repeat investigation shows no further evidence of contaminated dry-weather flow. If there is no dry-weather flow captured, or if sample results indicate contaminant concentrations below benchmark criteria, the investigation will proceed to the next drain segment downstream.
- Subsequent key junction manhole inspections will proceed until the location of suspected illicit discharges can be isolated to a pipe segment between two manholes.
- If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling assuming that wet weather sampling has already been completed at the outfall serving the catchment area.

During investigations, pipe connectivity will be updated as needed, and catchment delineations will be refined.

6.2 Source Isolation and Confirmation

Once the source of an illicit discharge is approximated between two manholes, more detailed investigation techniques will be used to isolate and confirm the source of the illicit discharge. The following methods may be used in isolating and confirming the source of illicit discharges:

- Sandbagging
- Dye Testing
- ZoomCam Inspections
- Smoke Testing
- CCTV/Video Inspections

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or any TV inspections, the Department of Public Works will notify property owners in the impacted area. For smoke testing, notices will be distributed to each property in advance of smoke testing and at the conclusion of smoke testing to inform property owners that the work is complete. Advertisements will also be placed in the local newspaper and a pre-smoke testing meeting will be held with stakeholders, and a telephone information line will be set up for property owners to call. For dye testing, in order to secure the right to enter private property in the project area in order to perform the dye testing, a letter will be mailed to property/business owners and residents for this purpose.

The scope of field investigation in support of Hamilton's IDDE Plan will be determined based on site-specific factors for each individual outfall including, but not limited to factors such as the size, density, and land uses in the tributary drainage area; the configuration, diameters, and total footage of drain pipe in the tributary area; the specific pollutants identified during monitoring; and other potential environmental influences. Selected field investigation taking into account the difficulties that a municipality would face in attempting to finance and procure contracts for combined field identification and removal construction efforts.

The field investigation methods to be utilized include, but are not limited to the following, and may be utilized in combination:

- Sandbagging: If no flow is observed at a particular junction manhole or key junction manhole at the time of inspection, the drain segment in the area of concern can be isolated by placing sandbags within outlets to manholes to form a temporary dam that collects any intermittent flow for a 24 to 48-hour dry weather period to determine if any intermittent dry-weather flow is present. If intermittent flow is captured, grabs samples will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. If it is determined that no flow is captured behind the sandbag after a 24 to 48-hour period, the tributary drainage pipes can be excluded as the source of any intermittent discharge.
- Dyed-water Testing: For any connections that could not be visually confirmed in the field (i.e. to a nearby catch basin), follow-up dye testing will be conducted of plumbing fixtures in neighboring homes and buildings in an effort to confirm the source of the unknown connection. Dyed water tests will consist of pouring dyed-water into plumbing fixtures and observing drainage system downstream in an attempt to confirm connection.
- ZoomCam Inspection: In selected tributary areas, or where indicated based on findings from other field investigation work, drainage structures will be inspected with a "zoom camera-on-

a-stick” in an attempt to gather additional information and narrow the location of observed dry-weather flow.

- Smoke Testing of Drains: Smoke testing may be utilized in selected areas in an attempt to locate illicit connections. Smoke testing will consist of the introduction of a non-toxic smoke into drainage segments containing suspected illicit discharges and observing adjacent buildings for signs of illicit connections. Smoke testing is a relatively inexpensive method of locating illicit connections to the storm drain system. Once smoke testing is complete, follow-up dye testing should again be conducted to confirm the nature of suspected connections by pouring dyed water into a suspected illicit connection (location of the smoke leak) and observing the surrounding storm drain system for the presence of the dye.
- Television Inspection of Drains: In small tributary areas, or as confirmation of findings from other field investigation work, drainpipes will be internally inspected to pinpoint and evaluate connections. Television inspection will consist of passing a closed-circuit television camera through all or a portion of the drain segments containing suspected illicit connections.

Records of on-going and proposed field investigations are included in Appendix F of this Plan. Hamilton will keep these records updated as IDDE field investigations are implemented.

6.3 Illicit Discharge Removal

Upon location of an illicit discharge, the Town will work to eliminate the illicit discharge as expeditiously as possible. When the specific source of an illicit discharge is identified, the Town of Hamilton will exercise its authority as necessary to require its removal. The Town will notify all responsible parties of any such discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities.

6.3.1 *Illicit Discharges under Municipal Responsibility*

The Town will undertake corrective action for illicit discharges under municipal responsibility by securing qualified construction contractors in accordance with federal, state, and local procurement laws/regulations in the event that the Town is unable to perform the work themselves. Removal will be accomplished as soon as practical based on the scope and cost of the removal effort, and available resources. Where elimination of an illicit discharge within 60 days of its identification is not possible, the Town will establish an expeditious schedule for its elimination and report the dates of identification and schedule for removal in the Town’s MS4 Annual Report. In the interim, the Town will also take all reasonable and prudent measures to minimize the discharge of pollutants to and from its MS4.

6.3.2 *Illicit Discharges under Non-Municipal Responsibility*

The Town will undertake removal of illicit discharges under non-municipal responsibility through the Town’s bylaw via prohibitions against illicit connections and provisions detailing legal authority for enforcement. Owners of private property will be required to eliminate illicit discharges from their properties through use of the following progressive enforcement steps taken as necessary:

- Written Order: The Town Manager may issue a written order to enforce the provisions of the bylaw, which may include: (a) elimination of illicit connections or discharges to the municipal separate storm sewer system; (b) performance of monitoring, analyses, and reporting; (c) that

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unlawful discharges, practices, or operations shall cease and desist; and (d) remediation of contamination in connection therewith.

- If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the town may, at its option, undertake such work, and expenses thereof shall be charged to the violator.
- Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be notified of the costs incurred by the Town, including administrative costs. The violator or property owner may file a written request objecting to the amount or basis of costs with the Department of Public Works within thirty (30) days of the receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Town Manager, affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in M.G.L. Ch. 59 §57 after the thirty-first day at which the costs first become due.

As investigations proceed, a list of illicit discharges identified and removed will be tracked in Appendix I. The Town will maintain an updated list of illicit discharges identified and removed. The Town's Annual Report will include the status of IDDE investigation and removal activities including the following information for each confirmed source:

- The location of the discharge and its source(s);
- A description of the discharge;
- The method of discovery;
- Date of discovery;
- Date of elimination, mitigation or enforcement action or planned corrective measures and a schedule for completing the illicit discharge removal; and
- Estimate of the volume of flow removed.

Within one (1) year of removal of all identified illicit discharges within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation. Confirmatory screening is not required in catchments where no illicit discharges or System Vulnerability Factors were identified, and no previous screening indicated suspicious flows.

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6.4 Ongoing Screening Results and Follow-up Catchment Ranking

Upon completion of all catchment investigations, and illicit discharge removal and confirmation where necessary, each outfall or interconnection will be reprioritized for screening in accordance with the ranking criteria outlined in Section 3.2 and scheduled for ongoing screening once every five years. Ongoing screening shall consist of dry weather screening and sampling consistent with Section 4.0. Wet weather screening and sampling will also be required at outfalls where wet weather screening was required due to SVFs in accordance with Section 5.0. All sampling results will be reported in the Town's MS4 Annual Report.

7.0 MUNICIPAL EMPLOYEE TRAINING

Training on the IDDE Program, including how to recognize illicit discharges, will be provided to municipal employees involved in the implementation of the program on an annual basis. Additional training specific to the functions of particular personnel and their role within the framework of the IDDE program may also be provided. Training materials utilized, the dates on which training was held, and staff that attended each training will be maintained in Appendix I. The Town will report annually on the frequency and type of employee training in the MS4 Annual Report submitted to EPA.

8.0 REPORTING

The progress and success of the IDDE program will be evaluated on an annual basis. The success of the IDDE program will be measured by the IDDE activities completed within the required permit timelines. The evaluation will be documented in the Town's Annual Report and will include the following indicators of program progress:

- Measures that demonstrate efforts to locate illicit discharges.
- Number of illicit discharges identified and removed.
- Number and percent of total outfall catchments served by the MS4 evaluated using the catchment investigation procedure.
- Number of dry weather outfall inspections/screenings.
- Number of wet weather outfall inspections/sampling events.
- Number of enforcement notices issued.
- All dry weather and wet weather screening and sampling results.
- Estimate of the volume of sewage removed, as applicable.
- Number of employees trained annually.

APPENDIX A

Town-wide Drainage Map

APPENDIX B

IDDE Bylaw – Chapter XXX, Illicit Discharge Detection and Elimination

violation shall be \$200.00. The penalty for the 3rd and subsequent violations shall be \$300.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

- E. Appeals. The decisions or orders of the Planning Board shall be final. Further relief shall be to a court of competent jurisdiction.
- F. Remedies Not Exclusive. The remedies listed in this by-law are not exclusive of any other remedies available under any applicable federal, state or local law.

13. SEVERABILITY

If any provision, paragraph, sentence, or clause of this by-law shall be held invalid for any reason, all other provisions shall continue in full force and effect.

CHAPTER XXX

ILLICIT DISCHARGE DETECTION AND ELIMINATION BY-LAW

1. PURPOSE

Regulation of illicit connections and discharges to the municipal storm drain system is necessary for the protection of the town's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment. The objectives of this By-Law are:

1. to prevent Pollutants from entering the town's municipal separate storm drain system (MS4);
2. to prohibit illicit connections and unauthorized discharges to the MS4;
3. to require the removal of all such illicit connections;
4. to comply with state and federal statutes and regulations relating to stormwater discharges; and
5. to establish the legal authority to ensure compliance with the provisions of this By-Law through inspection, monitoring, and enforcement.

2. DEFINITIONS

For the purposes of this By-Law, the following shall mean:

AUTHORIZED ENFORCEMENT AGENCY: The Board of Selectmen, as the Board of Public Works, with the Director of Public Works as its Designated Agent.

BEST MANAGEMENT PRACTICE (BMP): An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

CLEAN WATER ACT: The Federal Water Pollution Control Act (33 U.S.C. §1251 et seq.) as hereafter amended.

DISCHARGE OF POLLUTANTS: The addition from any source of any Pollutant or combination of Pollutants into the municipal storm drain system or into the waters of the United States or Commonwealth from any source.

GROUNDWATER: Water beneath the surface of the ground.

ILLICIT CONNECTION: A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drain system, including without limitation sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this By-Law.

ILLICIT DISCHARGE: Direct or indirect discharge to the municipal storm drain system that is not composed entirely of stormwater, except as exempted in Section 8. The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit or a Surface Water Discharge Permit, or resulting from fire fighting activities exempted pursuant to Section 8, of this By-Law.

IMPERVIOUS SURFACE: Any material or structure on or above the ground that prevents water infiltrating the underlying soil. Impervious surface includes without limitation roads, paved parking lots, sidewalks, and rooftops.

MUNICIPAL SEPARATE STORM DRAIN SYSTEM (MS4) or MUNICIPAL STORM SEWER SYSTEM: The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town of Hamilton.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER DISCHARGE PERMIT: A permit issued by United States Environmental Protection Agency or jointly with the State that authorizes the discharge of Pollutants to waters of the United States.

NON-STORMWATER DISCHARGE: Discharge to the municipal storm drain system not composed entirely of stormwater.

PERSON: An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

POLLUTANT: Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the Commonwealth.

Pollutants shall include without limitation:

1. paints, varnishes, and solvents;
2. oil and other automotive fluids;
3. non-hazardous liquid and solid wastes and yard wastes;
4. refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, and accumulations;
5. pesticides, herbicides, and fertilizers;
6. hazardous materials and wastes; sewage, fecal coliform and pathogens;
7. dissolved and particulate metals;
8. animal wastes;
9. rock, sand, salt, soils;
10. construction wastes and residues; and
11. noxious or offensive matter of any kind.

PROCESS WASTEWATER: Water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any material, intermediate product, finished product, or waste product.

RECHARGE: The process by which groundwater is replenished by precipitation through the percolation of runoff and surface water through the soil.

STORMWATER: Storm water runoff, snow melt runoff, and surface water runoff and drainage.

SURFACE WATER DISCHARGE PERMIT: A permit issued by the Department of Environmental Protection (DEP) pursuant to 314 CMR 3.00 that authorizes the discharge of Pollutants to waters of the Commonwealth of Massachusetts.

TOXIC OR HAZARDOUS MATERIAL or WASTE: Any material, which because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential

threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as Toxic or Hazardous under M.G.L. Ch. 21C and Ch. 21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

WATERCOURSE: A natural or man-made channel through which water flows or a stream of water, including a river, brook or underground stream.

WATERS OF THE COMMONWEALTH: All waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, costal waters, and groundwater.

WASTEWATER: Any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

3. APPLICABILITY

This By-Law shall apply to flows entering the municipally owned storm drainage system.

4. AUTHORITY

A. This By-Law is adopted under the authority granted by the Home Rule Amendment of the Massachusetts Constitution and the Home Rule Procedures Act, and pursuant to the regulations of the federal Clean Water Act found at 40 CFR §122.34 and the Phase II ruling from the Environmental Protection Agency found in the December 8, 1999 Federal Register.

B. Nothing in this By-Law is intended to replace the requirements or authority of any other By-Law, state, federal, or superseding authority.

5. RESPONSIBILITY FOR ADMINISTRATION

The Town Manager shall administer, implement and enforce this By-Law. Any powers granted to or duties imposed upon the Town Manager may be delegated in writing by him to the Designated Agent or to another authorized agent.

6. REGULATIONS

The Board of Selectmen may promulgate Rules and Regulations to effectuate the purposes of this By-Law. Failure by the Board to promulgate such Rules and Regulations shall not have the effect of suspending or invalidating this By-Law.

7. PROHIBITED ACTIVITIES

- A. Illicit Discharges. No person shall dump, discharge, cause or allow to be discharged any Pollutant or non-stormwater discharge into the municipal separate storm drain system (MS4), into a watercourse, or into the waters of the Commonwealth.
- B. Illicit Connections. No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drain system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.
- C. Obstruction of Municipal Storm Drain System. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drain system without prior written approval from the Designated Agent.

8. EXEMPTIONS

- A. Discharge or flow resulting from fire fighting activities.
- B. The following non-stormwater discharges or flows are exempt from the prohibition of non-stormwaters provided that the source is not a significant contributor of a Pollutant to the municipal storm drain system **and such discharge complies with the requirements of Chapter X, Section 9 of these By-laws.**
1. Waterline flushing;
 2. Flow from potable water sources;
 3. Springs;
 4. Natural flow from riparian habitats and wetlands;
 5. Diverted stream flow;
 6. Rising groundwater;
 7. Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater;
 8. Water from exterior foundation drains, footing drains (not including active groundwater dewatering systems), crawl space pumps, or air conditioning condensation;
 9. Discharge from landscape irrigation or lawn watering;

10. Water from individual residential car washing;
11. Discharge from dechlorinated swimming pool water (less than one ppm chlorine), provided the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;
12. Plowing, sanding, and salting, and other measures during snow and ice conditions;
13. Discharge from street sweeping;
14. Dye testing, provided verbal notification is given to the Designated Agent at least 7 days prior to the time of the test;
15. Non-stormwater discharge permitted under an NPDES permit or a Surface Water Discharge Permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency or the Department of Environmental Protection, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and
16. Discharge for which advanced written approval is received from the Designated Agent as necessary to protect public health, safety, welfare or the environment.
17. Discharge or flow that results from exigent conditions and occurs during a State of Emergency declared by any agency of the federal or state government, or by the Town Manager, the Board of Selectmen or the Board of Health.

9. EMERGENCY SUSPENSION OF STORM DRAINAGE SYSTEM ACCESS

The Designated Agent may suspend municipal storm drain system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened discharge of Pollutants that presents imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency suspension order, the Authorized Enforcement Agency may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

10. NOTIFICATION OF SPILLS

A. Notwithstanding other requirements of local, state or federal law, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of Pollutants to the municipal drainage system or waters of the Commonwealth, the person shall take all necessary steps to ensure containment, and cleanup of the release.

B. In the event of a release of oil or hazardous materials, the person shall immediately notify the municipal Fire and Police Departments and the Designated Agent. In the event of a release of non-hazardous material, the reporting person shall notify the Designated Agent no later than the next business day. The reporting person shall provide to the Designated Agent written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter.

C. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on-site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

11. ENFORCEMENT

A. The Town Manager shall enforce this By-Law, regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

B. Civil Relief. If a person violates the provisions of this By-Law, regulations, permit, notice, or order issued thereunder, the Board of Selectmen may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

B. Orders. The Town Manager may issue a written order to enforce the provisions of this By-Law or the regulations thereunder, which may include: (a) elimination of illicit connections or discharges to the MS4; (b) performance of monitoring, analyses, and reporting; (c) that unlawful discharges, practices, or operations shall cease and desist; and (d) remediation of contamination in connection therewith.

C. If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the town may, at its option, undertake such work, and expenses thereof shall be charged to the violator.

D. Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be notified of the costs incurred by the Town, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Town Manager within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Town Manager, affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in M.G.L. Ch. 59 §57 after the thirty-first day at which the costs first become due.

E. Criminal Penalties. Any person who violates any provision of this By-Law, regulation, or permit issued hereunder, shall be subject to fines, civil action, criminal prosecution, and tax liens, as appropriate and as lawfully established by the Town of Hamilton.

F. Non-Criminal Disposition. As an alternative to criminal prosecution or civil action, the Town of Hamilton may elect to utilize the non-criminal disposition procedure set forth in M. G.L. Ch. 40 §21D and General By-Law Chapter XIII, in which case the Board of Selectmen shall be the enforcing person. The penalty for each violation shall be \$100.00 for the first offense, \$200.00 for the second violation, and \$300.00 for the third violation. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

G. Entry to Perform Duties Under this By-Law. To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Town Manager may enter upon privately owned property for the purpose of performing his duties under this By-Law and regulations and may make or cause to be made such examinations, surveys or sampling as the Town Manager deems reasonably necessary.

H. Appeals. The decisions or orders of the Town Manager shall be final. Further relief shall be to a court of competent jurisdiction.

I. Remedies Not Exclusive. The remedies listed in this By-Law are not exclusive of any other remedies available under any applicable federal, state or local law.

SECTION 12. SEVERABILITY

The provisions of this By-Law are hereby declared to be severable. If any provision, paragraph, sentence, or clause, of this By-Law or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this By-Law.

SECTION 13. TRANSITIONAL PROVISIONS

Property owners shall have 90 days from the effective date of the By-Law to comply with its provisions or petition the Board of Selectmen for an extension provided good cause is shown for the failure to comply with the By-Law during the specified period.

CHAPTER XXXI

TOWN OF HAMILTON ADOPTION OF HISTORIC DISTRICT BY-LAW

1. There is hereby established a Historic District, hereinafter called "The District" under the provisions of General Laws, Chapter 40C, as amended, bounded and described as set forth in the copy of the by-law on file with the Town Clerk.

APPENDIX C

Catchment Assessment and Priority Ranking Matrix

Catchment System Vulnerability Factor Inventory

APPENDIX D

Chain of Custody Forms for Laboratory Sampling Analysis



Phone: 413-525-2332
 Fax: 413-525-6405
 Email: info@contestlabs.com

CHAIN OF CUSTODY RECORD

Company Name:

Address:

Phone:

Project Name:

Project Location:

Project Number:

Project Manager:

Con-Test Quote Name/Number:

Invoice Recipient:

Sampled By:

Requested Turnaround Time	
7-Day <input type="checkbox"/>	10-Day <input type="checkbox"/>
Due Date:	
Rush-Approval Required	
1-Day <input type="checkbox"/>	3-Day <input type="checkbox"/>
2-Day <input type="checkbox"/>	4-Day <input type="checkbox"/>
Data Delivery	
Format: PDF <input type="checkbox"/>	EXCEL <input type="checkbox"/>
Other:	
CLP Like Data Pkg Required: <input type="checkbox"/>	
Email To: _____	
Fax To #: _____	

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	¹ Matrix Code	Conc Code												

Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

of Containers
² Preservation Code
³ Container Code

Dissolved Metals Samples

Field Filtered
 Lab to Filter

Orthophosphate Samples

Field Filtered
 Lab to Filter

¹ Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

² Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

³ Container Codes:
 A = Amber Glass
 G = Glass
 P = Plastic
 ST = Sterile
 V = Vial
 S = Summa Canister
 T = Tedlar Bag
 O = Other (please define)

Relinquished by: (signature) Date/Time:

Detection Limit Requirements	Special Requirements
MA	<input type="checkbox"/> MA MCP Required
	<input type="checkbox"/> MCP Certification Form Required
	<input type="checkbox"/> CT RCP Required
	<input type="checkbox"/> RCP Certification Form Required
	<input type="checkbox"/> MA State DW Required
Other:	PWSID #

NELAC and AIHA-LAP, LLC Accredited

Received by: (signature) Date/Time:

Relinquished by: (signature) Date/Time:

Received by: (signature) Date/Time:

Relinquished by: (signature) Date/Time:

Project Entity

Government Municipality MWRA WRTA
 Federal 21 J School
 City Brownfield MBTA

Other

Chromatogram
 AIHA-LAP, LLC

PCB ONLY

Soxhlet
 Non Soxhlet

APPENDIX E

Sample Field Investigation Forms

Draft Sample Letters and Notifications

NOTIFICATION OF DYE TESTING

Dear Property Owners and Residents:

The Town of Hamilton is working to locate sources of illicit discharges to the Town's drainage system in an effort to improve water quality and meet the requirements of the 2016 General Permit for Discharges from the Municipal Separate Storm Sewer System (MS4 Permit). To locate sources of illicit discharges, the Town will be performing dye testing at your address some time between the hours of 8 am and 5 pm during the period from Thursday, October 6th through Wednesday, October 12th. Dyed water testing involves putting dyed water into a sanitary plumbing fixture and noting if the dyed water enters a storm drain or sanitary sewer. The dye is non-toxic and is not a risk to individuals or structures. The dyed water will help to identify any plumbing fixtures that are inadvertently connected to the Town's drainage system.

As part of this work, field personnel will need to enter your building or home to complete the dye testing. Field personnel will knock on your door to get access to your property. If you are not at home when our field crews stop by, we will call you to schedule an appointment. Field personnel will carry a letter of introduction and photo identification. The police department has been notified of this investigation.

For more information, please contact:

Mr. Tim Olson
Director of DPW
577 Bay Road
Hamilton, MA 01936
(978) 626-5227

We appreciate your cooperation in our effort to improve water quality.

**Town of Hamilton, Massachusetts
Illicit Discharge Detection & Elimination Program
Drain Segment Isolation - Field Data Sheet**

Date: _____
Sampler: _____

Outfall of Concern	Site Location	Sandbag Location	Sample Taken?	Comments	Sample Time

**Town of Hamilton, Massachusetts
Illicit Discharge Detection & Elimination Program**

Box Culvert Sampling

Date: _____
Sampler: _____

Site Location	Sample Location	Sample Time	Analysis Time	Chlorine (mg/L)	Temp. (°F)	Comments
	<i>ex: Drain manhole</i>					

**Town of Hamilton, Massachusetts
Illicit Discharge Detection & Elimination Program**

Dry-Weather Sampling

Date: _____
Sampler: _____

Outfall of Concern	Sample Location	Sample Time	Analysis Time	Chlorine (mg/L)	Temp. (°F)	Comments

**Town of Hamilton, Massachusetts
Illicit Discharge Detection & Elimination Program**

Dry-Weather Manhole Inspection

Date: _____

Inspector: _____

Outfall of Concern	Inspection Location	Findings

**HAMILTON, MASSACHUSETTS
STORMWATER SAMPLING
201X X OUTFALL MONITORING REPORT**

Outfall:

Outfall Name: _____ Pipe Diameter: _____ Pipe Material: _____

Descriptive: _____

Inspection:

Date: _____ Date Last Precipitation: _____ Flow Observed? Yes ___ No ___

Time: _____ Time of Low Tide: _____ If yes: Estimated Flow _____ gpm

Weather: Dry ___ Wet ___ Inspector: _____

Visual Observations:

Odor _____

Color _____

Floatables (solid/liquid) _____

Settleable Solids _____

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli	Sterile Plastic	Grab	--	--	--	<10°C
Enterococcus	Sterile Plastic	Grab	--	--	--	< 10°C
Surfactants & Specific Conductance	Plastic	Grab	--	--	--	<4°C
Ammonia-nitrogen	Plastic	Grab	--	--	--	<4°C, H ₂ SO ₄

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)				(same)			
Chlorine (mg/L)				(same)			

Outfall Photograph

TOWN OF HAMILTON NOTICE

SMOKE TESTING COMPLETED TODAY

Smoke testing was completed on your street today. Smoke should not have entered your premises unless there was a dry trap in an unused fixture or a defect in your plumbing.

Should smoke from the testing be detected within your building, do not be alarmed. The smoke is NON-TOXIC, NON-STAINING, and dissipates quickly through open windows. **IF YOU HAVE A LUNG AILMENT SUCH AS ASTHMA OR EMPHYSEMA, STAY AWAY FROM THE SMOKE.** Any smoke within a building should be reported to the Fire Department at 911.

If you have any additional questions, please contact the Town of Hamilton at **(978)-626-5227**. Leave a message including your name, address, and telephone number and we will respond to you promptly.

THANK YOU FOR YOUR COOPERATION. THE TOWN OF HAMILTON.

TOWN OF HAMILTON NOTICE

SMOKE TESTING

In order to identify illicit connections to the storm drain system, the Town of Hamilton will be conducting smoke testing of the *sanitary sewer or storm drain* from 7:00 a.m. to 5:00 p.m. between **July 30 and August 31, 20XX.**

During the test, white smoke is introduced to the *sanitary sewer system or storm drain system* via a smoke-generating machine. During this procedure, white smoke will be venting from holes in manhole covers located in the street and from plumbing vent pipes located on or near your roof surface. THIS IS NORMAL AND SHOULD NOT CAUSE ALARM.

Smoke should not enter your premises unless there is a dry trap in an unused fixture or a defect in your plumbing. You may wish to pour two gallons of water down your basement floor drain or unused plumbing fixture to ensure that the drain trap will be effective.

Should smoke be detected within your building, do not be alarmed. The smoke is NON-TOXIC, NON-STAINING, and dissipates quickly through open windows. IF YOU HAVE A LUNG AILMENT or RESPIRATORY CONDITION SUCH AS ASTHMA OR EMPHYSEMA, STAY AWAY FROM THE SMOKE. Any smoke within a building should be immediately reported to the persons conducting the tests.

PRIOR TO SMOKE TESTING, THE TOWN OF HAMILTON MUST IDENTIFY LOCATIONS OF RESIDENTS WITH POOR HEALTH CONDITIONS. ALTHOUGH THE SMOKE IS NON-TOXIC AND NON-STAINING, IT IS CAPABLE OF CAUSING IRRITATION, ESPECIALLY TO THOSE WITH LUNG AILMENTS SUCH AS ASTHMA OR EMPHYSEMA. IF YOU HAVE A RELATED HEALTH CONDITION PLEASE CONTACT THE TOWN AT xxx. PLEASE LEAVE A MESSAGE INCLUDING YOUR NAME, ADDRESS, AND TELEPHONE NUMBER SO THAT APPROPRIATE PRECAUTIONS MAY BE TAKEN.

THE TEST WILL BE PERFORMED ONE TO THREE BUSINESS DAYS AFTER YOU RECEIVE THE NOTICE AT YOUR HOME, PENDING WEATHER CONDITIONS.

PLEASE NOTE:

- YOU ARE NOT REQUIRED TO BE AT HOME DURING THE SMOKE TESTING.
- IF YOU WORK DURING THE DAY, PLEASE TAKE PRECAUTIONS TO VENTILATE THE AREA WHERE YOUR PET WILL BE.
- A FIREFIGHTER WILL BE ON-SITE WHILE SMOKE TESTING IS PERFORMED.

APPENDIX F

Ongoing and Proposed Field Investigation Records

APPENDIX G

Sample Written Order

Recipient Name
Company Name
Street Address
Hamilton, MA 01936

Re: Storm Drain (or Sanitary Sewer) Deficiency at *Address*

Dear Recipient Name:

Please be advised that the Town has become aware of a deficiency at your property located at XXXX related to your drainage system (or sewer system). *Provide a description of the problem identified.*

As required by the Town's General Permit for Discharges from the Municipal Separate Storm Sewer System (MS4 Permit), the Town is implementing a comprehensive Illicit Discharge Detection and Elimination (IDDE) program to identify non-stormwater discharges to the Town's drainage system that are impacting receiving water quality.

Chapter 242, Storm Drains, of the Town's General Bylaws prohibits the following activities and provides the Town with legal authority to ensure compliance with the provisions of this bylaw through inspection, monitoring and enforcement:

"A. Illicit Discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into the municipal storm drain system, into a watercourse, or into the waters of the Commonwealth.

B. Illicit Connections. No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drain system, regardless of whether the connection was permissible under applicable law, regulation, or custom at the time of connection."

Failure to investigate and correct this deficient condition may result in the Town of Hamilton instituting fines against you as long as you remain in non-compliance.

Abatement or remediation must be performed by *Insert Date*. Should you fail to perform the required abatement or remediation within the specified timeframe, the Town of Hamilton may undertake such work, and levy back-charges. Please provide an update to the Town regarding your findings.

If you have any questions regarding this matter or wish to discuss this matter further, please contact me at (978) 626-5227.

Sincerely,

Tim Olson
Director of DPW

APPENDIX H

Tracking List of Illicit Discharges Identified & Removed

APPENDIX I

IDDE Municipal Employee Training Records

Hamilton/Wenham MS4

Training Presentation

NAME

Town

Bill Tyack

Wenham

Peter Cobb

Hamilton

Keith Carter

Wenham

Travis Good

Wenham

Ronald Scorzynski

Hamilton


Tim Olson

HAMILTON

10:30AM

SWPPP Training (Year 3) for Hamilton Massachusetts

8/19/21

Name (Please Print)	Department
Brad Isbell	Highway
Raymond A. Currier	Highway
	Highway
Richard P. Campana III	Highway
Edward S Neal	Mechanic
Tim Olson	DPW DIRECTOR
Pete Cobb	Asst. DPW Director

IDDE & GOOD HOUSE KEEPING PRACTICES
Annual MS4 Training for Wenham, Massachusetts
3/14/2024

Name (Please Print)	Department
Brandon Wood	Highway
John Barbieri	Highway
Keith C Carter	Highway
Mark Lentini	Highway
Rider Souza	Highway