ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PLAN

Town of Stoughton

September 2023

ENVIRONMENTAL PARTNERS
— An Apex Company —

Illicit Discharge Detection and Elimination (IDDE) Plan Revision History

MS4 Materials that supplement the 2019 IDDE Document

Revision #	Date	Comments
0	6/2019	IDDE Plan published for Town comments
1	9/2021	Updated ranking table (Appendix C)
2	9/2022	Updated text, Appendix A, Appendix B, Appendix C, and Appendix F; attached new sampling reports (Appendix E)
3	9/2023	Updated text, Appendix A, Appendix B, Appendix C, and Appendix F; attached new sampling reports (Appendix E)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Printed Name Marc J. Tisdelle

Signature _____ Date 9/20/23

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICIES

SECTION 1 INTRODUCTION

SECTION 1.1 MS4 PROGRAM

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed for The Town of Stoughton to address the requirements of the United States Environmental Protection Agency's (EPA's) 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts, hereafter referred to as the "2016 Massachusetts MS4 Permit" or "MS4 Permit."

The 2016 Massachusetts MS4 Permit and 2020 Permit Modifications require that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

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

Under Minimum Control Measure 3, the permittee is required to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges. The IDDE program must also be recorded in a written (hardcopy or electronic) document. This IDDE Plan has been prepared to address this requirement. Originally, the Town published this Plan in 2019, and since then, the Town has updated the Plan as needed.

SECTION 1.2 ILLICIT DISCHARGES

An "illicit discharge" is any discharge to a drainage system that is not composed entirely of stormwater, with the exception of discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities.

Illicit discharges may take a variety of forms. Illicit discharges may enter the drainage system through direct or indirect connections. Direct connections may be relatively obvious, such as cross-connections of sewer services to the storm drain system. Indirect illicit discharges may be more difficult to detect or address, such as failing septic systems that discharge untreated sewage to a ditch within the MS4, or a sump pump that discharges contaminated water on an intermittent basis.

Some illicit discharges are intentional, such as dumping used oil (or other pollutant) into catch basins, a resident or contractor illegally tapping a new sewer lateral into a storm drain pipe to avoid

the costs of a sewer connection fee and service, and illegal dumping of yard wastes into surface waters.

Some illicit discharges are related to outdated building and construction practices. Examples of illicit discharges in this category include floor drains in old buildings that are connected to the storm drain system, as well as sanitary sewer overflows that enter the drainage system. Sump pumps legally connected to the storm drain system may be used inappropriately, such as for the disposal of floor washwater or old household products, in many cases due to a lack of understanding on the part of the homeowner.

Elimination of some discharges may require substantial costs and efforts, such as reconfiguring a sanitary sewer connection from a municipal storm to a sanitary sewer drain. Other beneficial strategies, such as reducing dog waste, can be accomplished through public outreach in conjunction with installing dog waste bins.

Regardless of the situation, illicit discharges can contribute high levels of pollutants, such as heavy metals, toxics, oil, grease, solvents, nutrients, and pathogens to surface waters.

SECTION 1.3 ALLOWABLE NON-STORMWATER DISCHARGES

The following categories of non-stormwater discharges are allowed under the MS4 Permit unless the permittee, EPA, or Massachusetts Department of Environmental Protection (MassDEP) identifies any category or individual discharge of non-stormwater discharge as a significant contributor of pollutants to the MS4:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- Uncontaminated pumped groundwater
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water, springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual resident car washing
- De-chlorinated swimming pool discharges
- Street wash waters
- Residential building wash waters without detergents

If these discharges are identified as significant contributors to the MS4, they must be considered an “illicit discharge” and addressed in the IDDE Plan (i.e., control these sources so they are no longer significant contributors of pollutants and/or eliminate the sources entirely).

SECTION 1.4 RECEIVING WATERS AND IMPAIRMENTS

Table 1-1 lists the "impaired waters" within the boundaries of Stoughton's MS4 regulated area. Impaired waters are water bodies that do not meet water quality standards for one or more designated use(s), such as recreation or aquatic habitat. The inventory is based on the Massachusetts 2018/2020 Integrated List of Waters published by MassDEP in February 2022 and updated every two years. The first draft of this IDDE Plan, published in 2019, and the Town's Notice of Intent (NOI), published in 2018, used the previous Massachusetts 2014 Integrated List of Waters. There are a few changes regarding Stoughton impaired waters classification between the 2014 and 2018/2020 Integrated Lists of Waters. In this period, MassDEP published Total Maximum Daily Load (TMDL) reports for Beaver Meadow Brook (MA73-20; Category 5 Water) and Steep Hill Brook (MA73-18; Category 5 Water), and both are now impaired for E. coli, Pinewood Pond is now impaired for aquatic plants (macrophytes), Ames Long Pond is now impaired for fanwort, Town Pond is no longer impaired for non-native aquatic plants but is now impaired for fanwort, and Unnamed Tributary MA73-32 is no longer impaired for low pH or phosphorus.

Table 1-1 Impaired Waters in the Town of Stoughton

Water Body Name	Segment ID	Category	Impairment(s)	Associated Approved TMDL
Farrington Pond	MA73040	4c	• Non-Native Aquatic Plants	
Glen Echo Pond	MA73022	4c	• Non-Native Aquatic Plants	
Pinewood Pond	MA73039	4c	• Non-Native Aquatic Plants • Aquatic Plants (Macrophytes)	
Town Pond	MA73056	4c	• Fanwort	
Woods Pond	MA73055	4c	• Non-Native Aquatic Plants	
Beaver Meadow Brook	MA73-20	5	• Oxygen, Dissolved • Escherichia coli (E. coli)	2592
Unnamed Tributary	MA73-32	5	• Benthic Macroinvertebrates • Escherichia coli (E. coli)	54860
Ames Long Pond	MA62001	5	• Non-Native Aquatic Plants • Aquatic Plants (Macrophytes) • Turbidity • Fanwort • Nutrient/Eutrophication Biological Indicators	
Steep Hill Brook	MA73-18	5	• Escherichia coli (E. coli)	

Category 4c Waters – impaired water bodies where the impairment is not caused by a pollutant. No TMDL required.
Category 5 Waters – impaired water bodies that require a TMDL.
"Approved TMDLs" are those that have been approved by EPA as of the date of issuance of the Massachusetts 2018/2020 List of Integrated Waters (February 2022).

These impairments require additional sampling in accordance with Appendix G of the MS4 Permit. The Town must sample for dissolved oxygen, temperature, BOD (Biological Oxygen Demand), total

phosphorous, and E. coli at outfalls discharging to the Beaver Meadow Brook; E. coli at Unnamed Tributary (MA73-32); total suspended solids and turbidity at Ames Long Pond; and E. coli at Steep Hill Brook. Due to the Boston Harbor Watershed (Neponset, Weymouth & Weir) and the Taunton Watershed's TMDL for pathogens, the Town must sample all outfalls for E. coli and fecal coliform.

In order to comply with the 2016 MS4 Permit, the Town of Stoughton must implement the illicit discharge program consistent with the requirements outlined in Appendix H. Catchments draining to Beaver Meadow Brook (MA73-20), Unnamed Tributary (MA73-32), Ames Long Pond (MA62001), and Steep Hill Brook (MA73-18) shall be designated as high priority for purposes of implementing the IDDE program.

SECTION 1.5 IDDE PROGRAM GOALS, FRAMEWORK, AND TIMELINE

The goals of the IDDE program are to find and eliminate illicit discharges to the Town's municipal separate storm sewer system and to prevent illicit discharges from happening in the future. The program consists of the following major components as outlined in the MS4 Permit:

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

The IDDE investigation procedure framework is shown in **Figure 1-1**. The required timeline for implementing the IDDE program is shown in **Table 1-2.**

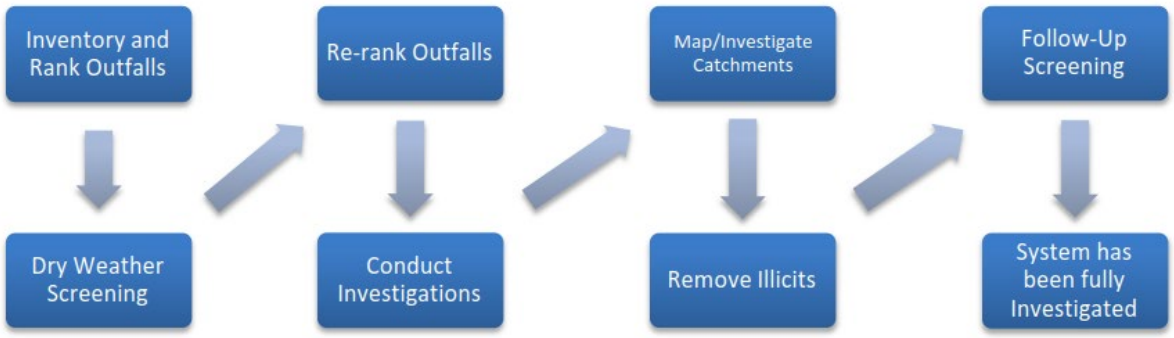


Figure 1-1 IDDE Investigation Procedure Framework

Table 1-2 IDDE Program Implementation Timeline

IDDE Program Requirement	Completion Date from Effective Date of Permit					
	1 Year (June 2019)	1.5 Years (Dec. 2019)	2 Years (June 2020)	3 Years (June 2021)	7 Years (June 2025)	10 Years (June 2028)
Written IDDE Program Plan	X					
Sanitary Sewer Overflow (SSO) Inventory	X					
Written Catchment Investigation Procedure		X				
Phase I Mapping			X			
Phase II Mapping						X
IDDE Regulatory Mechanism or By-law (if not already in place)				X		
Dry Weather Outfall Screening				X		
Follow-up Ranking of Outfalls and Interconnections				X		
Catchment Investigations – Problem Outfalls					X	
Catchment Investigations – all Problem, High and Low Priority Outfalls						X

SECTION 1.6 WORK COMPLETED UNDER THE 2003 MS4 PERMIT

The 2003 MS4 Permit required each MS4 community to develop a plan to detect illicit discharges using a combination of mapping of the storm system, adopting a regulatory mechanism to prohibit illicit discharges and enforce this prohibition, and identifying tools and methods to investigate suspected illicit discharges. Each MS4 community was also required to define how confirmed discharges would be eliminated and how their removal would be documented.

The Town of Stoughton has completed the following IDDE program activities consistent with the 2003 MS4 Permit requirements:

- Developed a map of outfalls and receiving waters
- Adopted an IDDE by-law or regulatory mechanism
- Developed procedures for locating illicit discharges (e.g., visual screening of outfalls for dry weather discharges, dye or smoke testing)
- Developed procedures for locating the source of the discharge
- Developed procedures for removal of the source of an illicit discharge
- Developed procedures for documenting actions and evaluating impacts on the storm sewer system subsequent to removal

In addition to the 2003 MS4 Permit requirements, the Town completed other IDDE-related activities prior to the 2016 MS4 Permit:

- Outfall sampling
- Additional storm system mapping, including the locations of catch basins, manholes and pipe connectivity

SECTION 2 AUTHORITY AND STATEMENT OF IDDE RESPONSIBILITIES

SECTION 2.1 LEGAL AUTHORITY

The Town of Stoughton has adopted Chapter 159: Stormwater Management Bylaw (adopted at 2021 Annual Town Meeting) and Rules and Regulations for Stormwater Management (approved by Select Board on October 19, 2021). Copies of the Stormwater Management Bylaw and Regulations for Stormwater Management are provided in **Appendix A**. The Stormwater Management Bylaw provides the Town of Stoughton with adequate legal authority to:

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

SECTION 2.2 STATEMENT OF RESPONSIBILITIES

The Stoughton Public Works Department is the lead municipal agency responsible for implementing the IDDE program pursuant to the provisions of the Illicit Discharges to Storm Drainage System. Other agencies or departments with responsibility for aspects of the program include:

- Public Works Department – Paul Giffune
- Sewer Department – Phil McNulty
- Water Department – Phil McNulty
- Building Department – Jack Erikson
- Engineering Department – Marc J. Tisdelle (interim)
- Board of Health – Lawrence Perry
- Conservation Agent – James B. Conlon
- Planning Board – William D. Roth
- Town Manager – Thomas J. Calter
- Facilities Director – Paul Giffune
- Laurence W. Langlois – GIS Manager / Stormwater Coordinator
- School Facilities – Joyce Husseini
- Plumbing Inspector – Scott Angelos

SECTION 3 STORMWATER SYSTEM MAPPING

The Town of Stoughton originally developed mapping of its stormwater system to meet the mapping requirements of the 2003 MS4 Permit. The 2016 MS4 Permit requires a more detailed storm system map than was required by the 2003 MS4 Permit. The revised mapping is intended to facilitate the identification of key infrastructure, factors influencing proper system operation, and the potential for illicit discharges.

The 2016 MS4 Permit requires the storm system map to be updated in two phases as outlined below. The Public Works Department is responsible for updating the stormwater system mapping pursuant to the 2016 MS4 Permit. The Town of Stoughton reports on the progress towards completion of the storm system map in each annual report. Updates to the stormwater mapping are included in Appendix B.

SECTION 3.1 PHASE I MAPPING

Phase I mapping must be completed within two (2) years of the effective date of the permit (July 1, 2020) and include the following information:

- Outfalls and receiving waters (previously required by the MS4-2003 permit)
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally owned stormwater treatment structures
- 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
- Initial catchment delineations. Topographic contours and drainage system information may be used to produce initial catchment delineations.

The Town of Stoughton has completed all of the Phase I mapping.

The following table contains information regarding the total number of drainage structures mapped within the MS4 Urbanized Area in Stoughton. It has been compiled using data collected by the Town. A complete stormwater system mapbook is included in the Stoughton Operations and Maintenance (O&M) Plan as Attachment 1. The O&M Plan is attached to the Storwmater Management Plan as an appendix.

Table 3-1 Summary of Mapped MS4 Structures

Structure Type	Number of Structures
Outfalls	152
Inlets	115
Upland Outlets	409
Catch Basins	3,369
Drain Manholes	2,418
Stormwater BMPs	59
Drain Pipes	5,990
Swales	14

SECTION 3.2 PHASE II MAPPING

Phase II mapping must be completed within ten (10) years of the effective date of the permit (July 1, 2028) and include the following information:

- Outfall spatial location (latitude and longitude with a minimum accuracy of +/-30 feet)
- Pipes
- Manholes
- Catch basins
- Refined catchment delineations. Catchment delineations must be updated to reflect information collected during catchment investigations
- Municipal sanitary sewer system (if available/applicable)
- Municipal combined sewer system (if applicable)

The Town of Stoughton has completed the following updates to its stormwater mapping to meet the Phase II requirements:

- Outfall spatial location (complete)
- Pipes (mapping is ongoing)
- Manholes (mapping is ongoing)
- Catch basins (mapping is ongoing)
- Refined catchment delineations (completed as catchment investigations are completed)
- Municipal combined sewer system (none in Stoughton)
- Municipal sanitary sewer system (mapping is ongoing)

The Town of Stoughton will continue to update and improve its stormwater mapping throughtout the permit term.

SECTION 3.3 ADDITIONAL RECOMMENDED MAPPING ELEMENTS

Although not a requirement of the 2016 MS4 Permit, the Town of Stoughton will consider the following recommended elements in its storm system mapping:

- Storm sewer material, size (pipe diameter), age
- Sanitary sewer system material, size (pipe diameter), age (if/when applicable)
- Privately owned stormwater treatment structures
- Area where the permittee's MS4 has received or could receive flow from septic system discharges
- Seasonal high water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- Alignments, dates and representation of work completed of past illicit discharge investigations
- Locations of suspected confirmed and corrected illicit discharges with dates and flow estimates

SECTION 4 SANITARY SEWER OVERFLOWS (SSOs)

The 2016 MS4 Permit requires municipalities to prohibit illicit discharges, including sanitary sewer overflows (SSOs), to the separate storm sewer system. SSOs are discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause serious water quality problems and property damage, and threaten public health. SSOs can be caused by blockages, line breaks, sewer defects that allow stormwater and groundwater to overload the system, power failures, improper sewer design, and vandalism.

The Town of Stoughton has completed an inventory of SSOs that have discharged to the MS4 since five (5) years prior to the effective date of the 2016 MS4 Permit, based on a review of available documentation pertaining to SSOs. The inventory includes all SSOs that occurred during wet or dry weather resulting from inadequate conveyance capacities or where interconnectivity of the storm and sanitary sewer infrastructure allows for transfer of flow between systems. **Table 4-1** is provided below as reference for future use, if necessary.

Upon detection of an SSO, the Town of Stoughton will eliminate it as expeditiously as possible and take interim measures to minimize the discharge of pollutants to and from its MS4 until the SSO is eliminated. Upon becoming aware of an SSO to the MS4, the Town of Stoughton will provide oral notice to EPA within 24 hours and written notice to EPA and MassDEP within five (5) days of becoming aware of the SSO occurrence.

The inventory in **Table 4-1** is updated by the Public Works Department when new SSOs are detected. The SSO inventory is included in the annual report, including the status of mitigation and corrective measures to address each identified SSO.

Table 4-1 SSO Inventory Stoughton,
Massachusetts Revision Date:
September 2023

SSO Location[1]	Discharge Statement[2]	Date[3]	Time Start[3]	Time End[3]	Estimated Volume[4]	Description[5]	Mitigation Completed[6]	Mitigation Planned[7]
175 Campanelli Parkway	Ground surface (no release to surface water)	4/18/2023	2:40PM	5:00PM	1,500 gal	200 Shuman Avenue by-passed their temporary E-one pump/septic system due to pump failure	Yes	Yes

[1] Location (approximate street crossing/address and receiving water, if any)
[2] A clear statement of whether the discharge entered a surface water directly or entered the MS4
[3] Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge)
[4] Estimated volume(s) of the occurrence
[5] Description of the occurrence indicating known or suspected cause(s)
[6] Mitigation and corrective measures completed with dates implemented
[7] Mitigation and corrective measures planned with implementation schedules

SECTION 5 ASSESSMENT AND PRIORITY RANKING OF OUTFALLS

The 2016 MS4 Permit requires an assessment and priority ranking of outfalls in terms of their potential to contain illicit discharges and SSOs. The ranking helps determine the priority order for performing IDDE investigations and meeting permit milestones.

SECTION 5.1 OUTFALL CATCHMENT DELINEATIONS

A catchment is the area that drains to an individual outfall or interconnection. The catchments for each of the MS4 outfalls have been delineated to define contributing areas for investigation of potential sources of illicit discharges. Catchments are typically delineated based on topographic contours and mapped drainage infrastructure, where available. As described in Section 3, initial catchment delineations were completed as part of the Phase I mapping, and refined catchment delineations will be completed as part of the Phase II mapping to reflect information collected during catchment investigations.

SECTION 5.2 OUTFALL AND INTERCONNECTION INVENTORY AND INITIAL RANKING

The Public Works Department completed an initial outfall and interconnection inventory and priority ranking to assess illicit discharge potential based on existing information. The initial inventory and ranking was completed within one (1) year from the effective date of the permit. The inventory is updated annually to include data collected in connection with dry weather screening and other relevant inspections. An updated inventory and ranking is provided in each annual report.

The outfall and interconnection inventory identifies each outfall and interconnection discharging from the MS4, records the structure location and condition, and provides a framework for tracking inspections, screenings, and other IDDE program activities.

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 shall be designated as Problem Outfalls. This shall include any outfalls/interconnections where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:

    - Olfactory or visual evidence of sewage,
    - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
    - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

Dry weather screening and sampling, as described in **Section 6** of this IDDE Plan and Part 2.3.4.7.b of the MS4 Permit, is not required for Problem Outfalls.

Stoughton has one (1) Problem Outfalls

2. **High Priority Outfalls**: Outfalls/interconnections that have not been classified as Problem Outfalls and that are:

    - Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
    - Determined by the permittee as high priority based on the characteristics listed below or other available information

    Stoughton has 55 High Priority Outfalls

3. **Low Priority Outfalls**: Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed below or other available information.

    Stoughton has 96 Low Priority Outfalls

4. **Excluded Outfalls**: Outfalls/interconnections with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks, or undeveloped green space and associated parking without services; and cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

    Stoughton has no Excluded Outfalls

Outfalls are ranked into the above priority categories (except for excluded outfalls, which are excluded from the IDDE program) based on the following characteristics of the defined initial catchment areas, where information is available. Additional relevant characteristics, including location-specific characteristics, may be considered but must be documented in this IDDE Plan. The initial ranking was based upon response provided by the Town of Stoughton in May 2019, and the updated ranking was based on those results and additional information provided by the Town and observed in the field. These characteristics considered include:

- **Previous screening results** – Previous screening/sampling results indicate likely sewer input (see criteria above for Problem Outfalls).
    - Four MS4 outfalls screened in 2016.
    - All remaining outfalls were screened in 2021 and 2022.
- **Past discharge complaints and reports**
    - No complaints provided.
- **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 0.5 mg/L, or
    - 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.
    - Gas stations, car washes, garden centers, car dealerships, and industrial areas were found within catchments: B, J, K, M, N, O, Q, R, S, T, U, V, X, Y, AB, AF, AO, AP.
- **Age of development and infrastructure** – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old may have a high illicit discharge potential. Developments 20 years or younger may have a low illicit discharge potential.
    - Built date from Assessor parcel mapping showed an even distribution that leaned more towards an age of 40+ years old.
- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems, but have since been converted to sewer connections may have a high illicit discharge potential.
    - The Park Street/Turnpike Street area is being converted from septic to sewer.
- **Historic combined sewer systems** – Contributing areas that were once serviced by a combined sewer system, but have since been separated may have a high illicit discharge potential.
    - Stoughton has never had a combined sewer system.
- **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.
    - Septic install database from Board of Health showed newer septic installs event distributed throughout the Town.
- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
    - No information provided directly from Town. Some culverted streams have been noted in the field during outfall screenings and now are incorporated into this ranking.
- **Water quality limited water bodies** – Impaired waters and/or waters with approved TMDL(s) that receive discharge from the MS4 have a high illicit discharge potential if the discharges could contain the pollutant identified as the cause of the water quality impairment.
    - Impaired water bodies are listed in **Table 1-1**.

The Town has updated the initial outfall priority ranking matrix based on screening and sampling completed since the initial ranking was developed. The screening and sampling and updates to the ranking table are discussed further in **Section 6.4** and **Section 6.5**. The updated outfall priority ranking matrix and catchment delineation mapping is included in **Appendix C**.

SECTION 6 DRY WEATHER OUTFALL SCREENING AND SAMPLING

Dry weather flow is a common indicator of potential illicit connections. The MS4 Permit requires all outfalls/interconnections (excluding Problem and Excluded Outfalls) to be inspected for the presence of dry weather flow. The Public Works Department, or hired representatives, are responsible for conducting dry weather outfall screening, starting with High Priority outfalls, followed by Low Priority outfalls, based on the initial priority rankings described in the previous section.

SECTION 6.1 WEATHER CONDITIONS

Dry weather outfall screening and sampling may occur when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snow melt is occurring. For purposes of determining dry weather conditions, program staff can use precipitation data from the Stoughton Municipal Airport Weather Station (Station ID KGHG). If the Stoughton Municipal Airport Weather Station is not available or not reporting current weather data, then the Ocean Bluff Weather Station (Station ID KMAMARSH132) can be used as a back-up.

SECTION 6.2 DRY WEATHER SCREENING/SAMPLING PROCEDURE

Section 6.2.1 General Procedure

The dry weather outfall inspection and sampling procedure consists of the following general steps:

1. Identify outfall(s) to be screened/sampled based on initial outfall inventory and priority ranking.
2. Acquire the necessary staff, mapping, and field equipment (see **Table 6-1** for list of potential field equipment).
3. Conduct the outfall inspection during dry weather:
    a. Mark and photograph the outfall.
    b. Record the inspection information and outfall characteristics (using paper forms or digital form using a tablet or similar device) (see form in **Appendix D**).
    c. Look for and record visual/olfactory evidence of pollutants in flowing outfalls including odor, color, turbidity, and floatable matter (suds, bubbles, excrement, toilet paper, or sanitary products). 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 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 and using optical brighteners.

6. Input results from screening and sampling into spreadsheet/database. Include pertinent information in the outfall/interconnection inventory and priority ranking.
7. Include all screening data in the annual report.

Previous outfall screening/sampling conducted under the 2003 MS4 Permit may be used to satisfy the dry weather outfall/screening requirements of the 2016 MS4 Permit only if the previous screening and sampling was substantially equivalent to that required by the 2016 MS4 Permit, including the list of analytes outlined in Section 2.3.4.7.b.iii.4 of the 2016 permit.

Section 6.2.2 Field Equipment

Table 6-1 lists field equipment commonly used for dry weather outfall screening and sampling.

Table 6-1 Field Equipment – Dry Weather Outfall Screening and Sampling

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 with 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 (PPE)	Reflective vest, safety glasses, and boots at a minimum
GPS Receiver	For taking spatial location data
Water Quality Sonde	If needed, for sampling conductivity, temperature, pH
Water Quality Meter	Handheld 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 (e.g., bacteria requires sterile containers)

Equipment	Use/Notes
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/Sampling Cage	For accessing hard to reach outfalls and manholes

Section 6.2.3 Sample Collection and Analysis

If flow is present during a dry weather outfall inspection, a sample must be collected and analyzed for the required permit parameters listed in **Table 6-2**. The general procedure for collection of outfall samples is as follows:

1. Fill out all sample information on sample bottles and field sheets (see **Appendix D** for 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 (rinse similar to dipper) for most parameters (see **Table 6-2**).
6. Place laboratory samples on ice for analysis of bacteria and pollutants of concern.
7. Fill out chain-of-custody form for laboratory samples.
8. Deliver samples to Massachusetts state certified laboratory.
9. Dispose of used test strips and test kit ampules properly.
10. Decontaminate all testing personnel and equipment.

In the event that an outfall is submerged, either partially or completely, or inaccessible, field staff can proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with the screening results. Field staff must continue to the next upstream structure until there is no longer an influence from the receiving water on the visual inspection or sampling.

Field test kits or field instrumentation are permitted for all parameters except indicator bacteria and any pollutants of concern. Field kits need to have appropriate detection limits and ranges. **Table 6-2**

lists various field test kits and field instruments that can be used for outfall sampling associated with the 2016 MS4 Permit parameters, other than indicator bacteria and any pollutants of concern.

Table 6-2 Field Screening Parameters and Analysis Methods

Analyte or Parameter	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	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 (Detergents)	CHEMetrics™ I-2017	CHEMetrics™ K-9400 and K-9404 Hach™ DE-2
Chlorine	CHEMetrics™ V-2000, K-2513 Hach™ Pocket Colorimeter™ II	NA
Conductivity	CHEMetrics™ I-1200 YSI Pro30 YSI EC300A Oakton 450	NA
Temperature	YSI Pro30 YSI EC300A Oakton 450	NA
Salinity	YSI Pro30 YSI EC300A Oakton 450	NA
Dissolved Oxygen	YSI Pro30 YSI EC300A Oakton 450	NA
Turbidity	Hach™ 2100Q Portable Turbidimeter Oakton CON 150	NA

[1] Where the stormwater discharges directly into a water quality limited water or a water subject to an approved TMDL, the sample must be analyzed for the pollutant(s) of concern identified as the cause of the water quality impairment.

Testing for indicator bacteria and any pollutants of concern must be conducted using analytical methods and procedures found in 40 CFR § 136. Samples for laboratory analysis must also be stored and preserved in accordance with procedures found in 40 CFR § 136. **Table 6-3** lists analytical methods, detection limits, hold times, and preservatives for laboratory analysis of dry weather sampling parameters.

Table 6-3 Required Analytical Methods, Detection Limits, Hold Times, and Preservatives

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Ammonia	**EPA**: 350.2 **SM**: 4500-NH3C	0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2, No preservative required if analyzed immediately
Surfactants	**SM**: 5540-C	0.01 mg/L	48 hours	Cool ≤6°C
Chlorine	**SM**: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required
Temperature	**SM**: 2550B	*NA*	Immediate	None Required
Specific Conductance	**EPA**: 120.1 **SM**: 2510B	0.2 µs/cm	28 days	Cool ≤6°C
Salinity	**SM**: 2520	-	28 days	Cool ≤6°C
Biochemical Oxygen Demand (BOD)	**EPA:** 360.1	**EPA:** 3 mg/L	48 hours	Cool ≤6°C
Dissolved Oxygen	**EPA:** 365.1	**EPA:** 1 mg/L	Immediate	Cool ≤6°C
Turbidity	**EPA:** 160.2	**EPA:** 1 NTU	48 hours	Cool ≤6°C
Indicator Bacteria: *E.coli* *Enterococcus* *Fecal Coliform*	*E.coli* **EPA**: 1603 **SM**: 9221B, 9221F , 9223 B **Other**: Colilert®, Colilert-18® *Enterococcus* **EPA**: 1600 **SM**: 9230 C **Other**: Enterolert® *Fecal Coliform* **EPA:** 1680	*E.coli* **EPA**: 1 cfu/100mL **SM**: 2 MPN/100mL **Other**: 1 MPN/100mL *Enterococcus* **EPA**: 1 cfu/100mL **SM**: 1 MPN/100mL **Other**: 1 MPN/100mL *Fecal Coliform* **EPA:** 1 ctu	8 hours	Cool ≤10°C, 0.0008% $Na_2S_2O_3$
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** : 0.01 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Total Nitrogen (Ammonia + Nitrate/Nitrite, methods are for Nitrate-Nitrite and need to be combined with Ammonia listed above.)	**EPA**: Cadmium reduction (automated)-353.2 Rev. 2.0, **SM**: 4500-NO_3 E-F	**EPA**: 0.05 mg/L **SM** : 0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2

40 CFR § 136: http://www.ecfr.gov/cgi-bin/text idx?SID=b3b41fdea0b7b0b8cd6c4304d86271b7&mc=true&node=pt40.25.136&rgn=div5
SM = Standard Methods

SECTION 6.3 INTERPRETING OUTFALL SAMPLING RESULTS

Outfall analytical data from dry weather sampling can be used to help identify the major type or source of discharge. **Table 6-4** shows values identified by the EPA and the Center for Watershed Protection as typical screening values for select parameters. These represent the typical concentration (or value) of each parameter expected to be found in stormwater. Screening values that exceed these benchmarks may be indicative of pollution and/or illicit discharges.

Table 6-4 Benchmark Field Measurements for Select Parameters

Analyte or Parameter	Benchmark
Ammonia	>0.5 mg/L
Conductivity	>2,000 µS/cm
Surfactants	>0.25 mg/L
Chlorine	>0.02 mg/L (detectable levels per the 2016 MS4 Permit)
Indicator Bacteria: *E.coli* *Enterococcus*	*E.coli*: the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 mL and no single sample taken during the bathing season shall exceed 235 colonies per 100 mL *Enterococcus:* the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 mL and no single sample taken during the bathing season shall exceed 61 colonies per 100 mL

SECTION 6.4 DRY WEATHER WORK COMPLETED TO DATE

The Town's outfall inventory contained 219 outfalls when the NOI was submitted in 2018. Town field staff, or hired representatives, screened many outfalls as part of the 2003 MS4 Permit, and since the start of the new 2016 MS4 Permit, the Town has completed dry weather screening of the remaining outfalls. Screenings were completed over the course of six (6) days in May 2020, May 2021, and June 2021. Based on field observations, the Town removed 72 structures from the Town's outfall inventory because the structures were verified as culvert outlets/inlets, the drainage network changed since the original mapping was completed, or the structure is privately maintained.

In 2022, the Town further improved their outfall inventory. In this round of updates, 47 outfalls were removed from the inventory and 11 outfalls were added. Structures were removed based on roadway and drainage ownership, a comparison with the 2022 Massachusetts Department of Transportation GIS data and outfall inventory, and separate stormwater mapping updates including BMP identification. *The Town's current MS4 outfall inventory includes 147 outfalls*. All the outfalls have been screened, and the screening and sampling results are attached in Appendix E.

SECTION 6.5 FOLLOW-UP RANKING OF OUTFALLS AND INTERCONNECTIONS

The Town of Stoughton is responsible for updating the ranking of outfalls and interconnections. Outfalls/interconnections where relevant information is found indicating sewer input to the MS4 or sampling results indicating sewer input are highly likely to contain illicit discharges from sanitary sources. Such outfalls/interconnections are ranked at the top of the High Priority Outfalls category for investigation. Other outfalls and interconnections may be re-ranked based on any new information from the dry weather screening.

The Town updated and re-prioritized the initial outfall rankings based on information gathered during dry weather screening over the first five (5) years of the permit term (June 30, 2023). The outfall ranking table did not significantly change. During FY23 Catchment Investigations, 15 new MS4 outfalls were identified and added to the Town's outfall inventory. The location of the outfalls and catchment rankings are summarized in Table 6-5.

Table 6-5 Location and Catchment Priority of Newly found Outfalls

Outfall ID	Catchment ID	Address	Receiving Water	Catchment Ranking
OF-105A	HW	100 Campanelli Parkway	Lovett Brook	Low
OF-105B	HW	100 Campanelli Parkway	Lovett Brook	Low
OF-192	AV	63 York Street	Beaver Meadow Brook	Low
OF-553O-1	HW	1782 West Street	Ames Long Pond	High
OF-553S-1	HW	1782 West Street	Ames Long Pond	High
OF-553S-2	HW	1782 West Street	Ames Long Pond	High
OF-553S-3	HW	1782 West Street	Ames Long Pond	High
OF-553S-4	HX	1782 West Street	Ames Long Pond	High
OF-553S-5	B	1782 West Street	Ames Long Pond	High
OF-553S-6	B	1782 West Street	Ames Long Pond	High
OF-560	IB	144 West Street	Town Pond	Low
OF-560S	IB	144 West Street	Town Pond	Low
OF-643	JP	18 Fitzpatrick Street	Coweeset Brook	Low
OF-812	HW	1098 Turnpike Street	Beaver Pond	Low
OF-813	KL	20 Maple Street	Unnamed Tributary To Beaver Brook	Low

After completing FY23 Catchment Investigations and re-evaluating the Town's outfall inventory, the new MS4 outfall count as of 2023 was 152. The updated ranking table is attached as **Appendix C.**

SECTION 7 CATCHMENT INVESTIGATIONS

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to trace the source of the potential discharge within the outfall catchment area. Catchment investigation techniques include, but are not limited to, review of maps, historic plans, and records; manhole observation; dry and wet weather sampling; video inspection; smoke testing; and dye testing. This section outlines a systematic procedure to investigate outfall catchments to trace the source of potential illicit discharges. All data collected as part of the catchment investigations is recorded and reported in each annual report.

SECTION 7.1 SYSTEM VULNERABILITY FACTORS

The Public Works Department has reviewed relevant mapping and historic plans and records to identify areas within the catchment with higher potential for illicit connections. The following information has been reviewed:

- Plans related to the construction of the drainage network
- Plans related to the construction of the sewer network
- Prior work on storm drains or sewer lines
- Board of Health or other municipal data on septic systems
- Complaint records related to SSOs
- Septic system breakouts

Based on the review of this information, the presence of any of the following **System Vulnerability Factors (SVFs)** have been identified for each catchment and will continue to be evaluated. The following are required SVFs to be considered:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
- Common or twin-invert manholes serving storm and sanitary sewer alignments
- Common trench construction serving both storm and sanitary sewer alignments
- Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
- Areas formerly served by combined sewer systems
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations

The following are optional SVFs the EPA recommends considering:

- Any storm drain infrastructure greater than 40 years old
- 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 that poor owner maintenance)
- 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 that poor owner maintenance)
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs
- Any sanitary sewer infrastructure greater than 40 years old

The Town has completed an SVF inventory for catchments visited during catchment investigations. The SVF inventory for these catchments is documented in **Appendix F** and will be updates as more SVFs are identified and more catchments investigated. The SVF inventory will be included in each annual report.

SECTION 7.2 DRY WEATHER MANHOLE INSPECTIONS

The Town of Stoughton has implemented a dry weather 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 or SSOs.

The Public Works Department is responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information is incorporated into the storm system map and catchment delineations are refined based on 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 catchments identified for investigation, during dry weather, field crews systematically inspect key junction manholes for evidence of illicit discharges. This program involves progressive inspection and sampling at manholes in the storm drain network to isolate and eliminate illicit discharges.

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

- 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.

For most catchments, manhole inspections proceed from the outfall moving up into the system.

However, the decision to move up or down the system depends on the nature of the drainage system and the surrounding land use and the availability of information on the catchment and drainage system. Moving up the system can begin immediately when an illicit discharge is detected at an outfall, and only a map of the storm drain system is required. 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 proceeds as follows:

1. Manholes are opened and inspected for visual and olfactory evidence of illicit connections. A sample field inspection form is provided in Appendix D.
2. If flow is observed, a sample is collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis are in accordance with procedures outlined in Section 6. Additional indicator sampling may assist in determining potential sources (e.g., bacteria for sanitary flows, conductivity to detect tidal backwater, etc.).
3. Where sampling results or visual or olfactory evidence indicate potential illicit discharges or SSOs, the area draining to the junction manhole is flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
4. Subsequent key junction manhole inspections proceed until the location of suspected illicit discharges or SSOs can be isolated to a pipe segment between two manholes.
5. If no evidence of an illicit discharge is found, catchment investigations are considered complete upon completion of key junction manhole sampling.

SECTION 7.3 WET WEATHER OUTFALL SAMPLING

Where a minimum of one (1) System Vulnerability Factor (SVF) is identified based on previous information or the catchment investigation, a wet weather investigation must also be conducted at the associated outfall. The Public Works Department is responsible for implementing the wet weather outfall sampling program and making updates as necessary. Wet weather sampling has begun in Stoughton and sampling results are located within Appendix E.

Outfalls are inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the MS4.

Wet weather outfall sampling proceeds as follows:

1. At least one wet weather sample is collected at the outfall for the same parameters required during dry weather screening.
2. Wet weather sampling occurs 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 triggers sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred. To the extent feasible, sampling occurs 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 is performed, as warranted, or source isolation and confirmation procedures is followed as described in **Section 7.4**.
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, catchment investigations are considered complete.

SECTION 7.4 SOURCE ISOLATION AND CONFIRMATION

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

- Sandbagging
- Smoke Testing
- Dye Testing
- CCTV/Video Inspections
- Optical Brightener Monitoring
- IDDE Canines

These methods are described in the sections below. Instructions for these and other IDDE methods are provided in **Appendix G**.

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or TV inspections, the Public Works Department will notify property owners in the affected area. Smoke testing notification will include hanging notifications for single family homes and posting notifications in businesses and building lobbies of multi-family dwellings.

Section 7.4.1 Sandbagging

This technique can be particularly useful when attempting to isolate intermittent illicit discharges or those with very little perceptible flow. The technique involves placing sandbags or similar barriers (e.g., caulking, weirs/plates, or other temporary barriers) within outlets to manholes to form a temporary dam that collects any intermittent flows that may occur. Sandbags are typically left in place for 48 hours and should only be installed when dry weather is forecasted. If flow has collected behind the sandbags/barriers after 48 hours, it can be assessed using visual observations or by sampling. If no flow collects behind the sandbags/barriers, the upstream pipe network can be ruled out as a source of the intermittent discharge. Finding appropriate durations of dry weather and the need for multiple trips to each manhole makes this method both time-consuming and somewhat limiting.

Section 7.4.2 Smoke Testing

Smoke testing involves injecting non-toxic smoke into drain lines and noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the system itself. Typically, a smoke bomb or smoke generator is used to inject the smoke into the system at a catch basin or manhole, and air is then forced through the system. Test personnel are placed in areas where there are suspected illegal connections or cracks/leaks, noting any escape of smoke (indicating an illicit connection or damaged storm drain infrastructure). It is important when using this technique to make proper notifications to area residents and business owners as well as local police and fire departments.

If the initial test of the storm drain system is unsuccessful, then a more thorough smoke test of the sanitary sewer lines can also be performed. Unlike storm drain smoke tests, buildings that do not emit smoke during sanitary sewer smoke tests may have problem connections and may also have sewer gas venting inside, which is hazardous.

It should be noted that smoke may cause minor irritation of respiratory passages. Residents with respiratory conditions may need to be monitored or evacuated from the area of testing altogether to ensure safety during testing.

Section 7.4.3 Dye Testing

Dye testing involves flushing non-toxic dye into plumbing fixtures such as toilets, showers, and sinks and observing nearby storm drains and sewer manholes as well as stormwater outfalls for the presence of the dye. Similar to smoke testing, it is important to inform local residents and business owners. Police, fire, and local public health staff should also be notified prior to testing in preparation of responding to citizen phone calls concerning the dye and their presence in local surface waters.

A team of two or more people is needed to perform dye testing (ideally, all with two-way radios). One person is inside the building, while the others are stationed at the appropriate storm sewer and sanitary sewer manholes (which should be opened) and/or outfalls. The person inside the building adds dye into a plumbing fixture (e.g., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The person inside the building then radios to the outside

crew that the dye has been dropped, and the outside crew watches for the dye in the storm sewer and sanitary sewer, recording the presence or absence of the dye.

The test can be relatively quick (about 30 minutes per test), effective (results are usually definitive), and inexpensive. Dye testing is best used when the likely source of an illicit discharge has been narrowed down to a few specific houses or businesses.

Section 7.4.4 CCTV/Video Inspection

Another method of source isolation involves the use of mobile video cameras that are guided remotely through stormwater drain lines to observe possible illicit discharges. IDDE program staff can review the videos and note any visible illicit discharges. While this tool is both effective and usually definitive, it can be costly and time-consuming when compared to other source isolation techniques.

Section 7.4.5 Optical Brightener Monitoring

Optical brighteners are fluorescent dyes that are used in detergents and paper products to enhance their appearance. The presence of optical brighteners in surface waters or dry weather discharges suggests there is a possible illicit discharge or insufficient removal through adsorption in nearby septic systems or wastewater treatment. Optical brightener monitoring can be done in two ways. The most common, and least expensive, methodology involves placing a cotton pad in a wire cage and securing it in a pipe, manhole, catch basin, or inlet to capture intermittent dry weather flows. The pad is retrieved at a later date and placed under UV light to determine the presence/absence of brighteners during the monitoring period. A second methodology uses handheld fluorometers to detect optical brighteners in water sample collected from outfalls or ambient surface waters. Use of a fluorometer, while more quantitative, is typically more costly and is not as effective at isolating intermittent discharges as other source isolation techniques.

Section 7.4.6 IDDE Canines

Dogs specifically trained to smell human-related sewage are becoming a cost-effective way to isolate and identify sources of illicit discharges. While not widespread at the moment, the use of IDDE canines is growing as is the canines' accuracy. The use of IDDE canines is not recommended as a standalone practice for source identification; rather it is recommended as a tool to supplement other conventional methods, such as dye testing, in order to fully verify sources of illicit discharges.

SECTION 7.5 ILLICIT DISCHARGE REMOVAL

When the specific source of an illicit discharge is identified, the Town of Stoughton will exercise its authority as necessary to require its removal. The 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
- Estimate of the volume of flow removed

Section 7.5.1 Confirmatory Outfall Screening

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.

SECTION 7.6 ONGOING SCREENING

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be re-prioritized for screening and scheduled for ongoing screening once every five (5) years. Ongoing screening will consist of dry weather screening and sampling consistent with the procedures described in **Section 6** of this plan. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors and will be conducted in accordance with the procedures described in **Section 7.3**. All sampling results will be reported in the annual report.

SECTION 8 TRAINING

Annual IDDE training is made available to all employees involved in the IDDE program. This training includes information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. Training records are and will continue to be maintained. A training attendance log is included in **Appendix H**. The frequency and type of training is included in the annual report.

SECTION 9 PROGRESS REPORTING

The progress and success of the IDDE program is evaluated on an annual basis. The evaluation is documented in the annual report and includes the following indicators of program progress:

- Number of SSOs and 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

The success of the IDDE program is measured by the IDDE activities completed within the required permit timelines.

APPENDIX A

Legal Authority (IDDE By-law or Ordinance)

Chapter 159

STORMWATER MANAGEMENT

GENERAL REFERENCES

Groundwater protection -- See Ch. 107.

Hazardous waste -- See Ch. 113.

Streets and sidewalks -- See Ch. 162.

Water -- See Ch. 188.

Wetlands protection -- See Ch. 191.

Zoning -- See Ch. 191.

Conservation Commission -- See Ch. 287.

§ 159-1. Objectives.

A. Increased and contaminated stormwater runoff is a major cause of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater; contamination of drinking water supplies; alteration or destruction of aquatic and wildlife habitat; and flooding.

B. Regulation of illicit connections and discharges to the municipal storm drain system is necessary for the protection of Stoughton's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment.

C. The harmful impacts of soil erosion and sedimentation are the impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater; contamination of drinking water supplies; alteration or destruction of aquatic and wildlife habitat; flooding; and overloading or clogging of municipal catch basins and storm drainage systems.

D. Increased and contaminated stormwater runoff associated with developed land uses and the accompanying increase in impervious surface are major causes of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater.

E. The objectives of this bylaw are:

(1) To prevent pollutants from entering Stoughton's municipal separate storm sewer 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 bylaw through inspection, monitoring, and enforcement;

(6) To require practices that eliminate soil erosion and sedimentation and control the volume and rate of stormwater runoff resulting from land disturbance activities;

(7) To promote infiltration and the recharge of groundwater;

(8) To ensure that soil erosion and sedimentation control measures and stormwater runoff control practices are incorporated into the site planning and design process and are implemented and maintained;

(9) To require practices to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;

(10) To require practices to control the flow of stormwater from new and redeveloped sites into the Stoughton storm drainage system in order to prevent flooding and erosion;

(11) To protect groundwater and surface water from degradation;

(12) To ensure adequate long-term operation and maintenance of structural stormwater best management practices so that they work as designed.

§ 159-2. Definitions.

For the purposes of this bylaw, the following shall mean:

ABUTTER — The owner(s) of land abutting the activity.

AGRICULTURE — The normal maintenance or improvement of land in agricultural or aquacultural use, as defined by the Massachusetts Wetlands Protection Act and its implementing regulations.

ALTERATION OF DRAINAGE CHARACTERISTICS — Any activity on an area of land that changes the water quality, force, direction, timing or location of runoff flowing from the area. Such changes include: change from distributed runoff to confined, discrete discharge; change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area.

APPLICANT — Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the commonwealth or the federal government to the extent permitted by law, requesting a soil erosion and sediment control permit for proposed land-disturbance activity.

AUTHORIZED ENFORCEMENT AGENCY — The Stoughton Board of Selectmen, acting as Drain Commissioners (hereafter the Board), its employees or agents designated to enforce this bylaw.

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

CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) — A certified specialist in soil erosion and sediment control. This certification program, sponsored by the Soil and Water Conservation Society in cooperation with the American Society of Agronomy, provides the public with evidence of professional qualifications.

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

CLEARING — Any activity that removes the vegetative surface cover.

CONSTRUCTION AND WASTE MATERIALS — Excess or discarded building or site materials, including but not limited to concrete truck washout, chemicals, litter and sanitary waste, at a construction site that may adversely impact water quality.

DEVELOPMENT — The modification of land to accommodate a new use or expansion of use, usually involving construction.

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.

DISTURBANCE OF LAND — Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel or similar earth material.

EROSION — The wearing away of the land surface by natural or artificial forces such as wind, water, ice, gravity, or vehicle traffic and the subsequent detachment and transportation of soil particles.

EROSION AND SEDIMENTATION CONTROL PLAN — A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a certified professional in erosion and sediment control (CPESC) which includes best management practices or equivalent measures designed to control surface runoff, erosion and sedimentation during preconstruction and construction-related land disturbance activities.

ESTIMATED HABITAT OF RARE WILDLIFE AND CERTIFIED VERNAL POOLS — Habitats delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

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 bylaw.

ILLICIT DISCHARGE — Direct or indirect discharge to the municipal storm drain system that is not composed entirely of stormwater, except as exempted in § 157-7. 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 § 159-7D of this bylaw.

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.

LAND-DISTURBING ACTIVITY — Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material.

MASSACHUSETTS ENDANGERED SPECIES ACT — MGL c. 131A and its implementing regulations at 321 CMR 10.00 which prohibit the taking of any rare plant or animal species listed as endangered, threatened, or of special concern.

MASSACHUSETTS STORMWATER MANAGEMENT POLICY — The policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act MGL c. 131, § 40, and Massachusetts Clean Waters Act MGL c. 21, §§ 23 through 56. The policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OR MUNICIPAL STORM DRAIN 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 Stoughton.

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.

OPERATION AND MAINTENANCE PLAN — A plan setting up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to insure that it continues to function as designed.

OUTFALL — The point at which stormwater flows out from a point source discernible, confined and discrete conveyance into waters of the commonwealth.

OUTSTANDING RESOURCE WATERS (ORWs) — Waters designated by the Massachusetts Department of Environmental Protection as ORWs. These waters have exceptional sociologic, recreational, ecological and/or aesthetic values and are subject to more stringent requirements under both the Massachusetts Water Quality Standards (314 CMR 4.00)[1] and the Massachusetts Stormwater Management Standards. ORWs include vernal pools certified by the Natural Heritage Program of the Massachusetts Department of Fisheries and Wildlife and Environmental Law Enforcement, all Class A designated public water supplies with their bordering vegetated wetlands, and other waters specifically designated.

OWNER — A person with a legal or equitable interest in property.

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.

POINT SOURCE — Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

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:

A. Paints, varnishes, and solvents;

B. Oil and other automotive fluids;

C. Nonhazardous liquid and solid wastes and yard wastes;

D. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, accumulations and floatables;

E. Pesticides, herbicides, and fertilizers;

F. Hazardous materials and wastes; sewage, fecal coliform and pathogens;

G. Dissolved and particulate metals;

H. Animal wastes;

I. Rock, sand, salt, soils;

---

1. Editor's Note: The Massachusetts Surface Water Quality Standards.

J. Construction wastes and residues; and

K. Any noxious or offensive matter of any kind.

PRECONSTRUCTION — All activity in preparation for construction.

PRIORITY HABITAT OF RARE SPECIES — Habitats delineated for rare plant and animal populations protected pursuant to the Massachusetts Endangered Species Act and its regulations.

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.

REDEVELOPMENT — Development, rehabilitation, expansion, demolition or phased projects that disturb the ground surface or increase the impervious area on previously developed sites.

RUNOFF — Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SEDIMENT — Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

SEDIMENTATION — The process or act of deposition of sediment.

SLOPE — The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance.

SOIL — Any earth, sand, rock, gravel, or similar material.

STABILIZATION — The use, singly or in combination, of mechanical, structural, or vegetative methods, to prevent or retard erosion.

STORMWATER — Stormwater runoff, snowmelt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN — A plan required as part of the application for a Stormwater Management Permit. See § 159-9.

STRIP — Any activity which removes the vegetative ground surface cover, including tree removal, clearing, grubbing, and storage or removal of topsoil.

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 MGL c. 21C and c. 21E and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

TSS — Total suspended solids.

VERNAL POOLS — Temporary bodies of freshwater which provide critical habitat for a number of vertebrate and invertebrate wildlife species.

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, by-product or waste product.

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, appropriational waters, and groundwater.

WETLAND RESOURCE AREA — Areas specified in the Massachusetts Wetlands Protection Act MGL c. 131, § 40, and in the Town of Stoughton Wetlands Protection Bylaw.

WETLANDS — Tidal and nontidal areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial (land-based) and aquatic (water-based) environments, including freshwater marshes around ponds and channels (rivers and streams), brackish and salt marshes; common names include marshes, swamps and bogs.

§ 159-3. Authority.

This bylaw 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.

§ 159-4. Responsibility for administration.

The Board shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Board may be delegated in writing by the Board to employees or agents of the Board.

§ 159-5. (Reserved)

§ 159-6. Regulations.

The Board may promulgate rules and regulations to effectuate the purposes of this bylaw. Failure by the Board to promulgate such rules and regulations shall not have the effect of suspending or invalidating this bylaw.

§ 159-7. Discharges to the municipal storm drain system.

A. Applicability. This bylaw shall apply to flows entering the municipally owned storm drainage system.

B. Prohibited activities.

(1) Illicit discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into the municipal separate storm sewer system (MS4), into a watercourse, or into the waters of the commonwealth.

(2) 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.

(3) 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 Board.

C. Exemptions.

(1) Discharge or flow resulting from fire-fighting activities.

(2) 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:

(a) Waterline flushing;

(b) Flow from potable water sources;

(c) Springs;

(d) Natural flow from riparian habitats and wetlands;

(e) Diverted stream flow;

(f) Rising groundwater;

(g) Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater;

(h) Water from exterior foundation drains, footing drains (not including active groundwater dewatering systems), crawl space pumps, or air-conditioning condensation;

(i) Discharge from landscape irrigation or lawn watering;

(j) Water from individual residential car washing;

(k) 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;

(l) Discharge from street sweeping;

(m) Dye testing, provided verbal notification is given to the Board prior to the time of the test;

(n) 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

(o) Discharge for which advanced written approval is received from the Board as necessary to protect public health, safety, welfare or the environment.

D. Emergency suspension of storm drainage system access. The Board 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.

E. Notification of spills. 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. In the event of a release of oil or hazardous materials, the person shall immediately notify the municipal Fire and Police Departments. In the event of a release of nonhazardous material, the reporting person shall notify the authorized

enforcement agency no later than the next business day. The reporting person shall provide to the authorized enforcement agency written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter. 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.

F. Transitional provisions. Residential property owners shall have 30 days from the effective date of the bylaw to comply with its provisions, provided good cause is shown for the failure to comply with the bylaw during that period.

§ 159-8. Stormwater management and land disturbance.

A. Applicability.

(1) This bylaw shall apply to all activities that result in disturbance of one or more acres of land that drains to the municipal separate storm sewer system.

(2) Except as authorized by the Board in a land disturbance permit or as otherwise provided in this bylaw, no person shall perform any activity that results in disturbance of an acre or more of land. Normal maintenance and improvement of land in agricultural or aquacultural use, as defined by the Wetlands Protection Act regulation 310 CMR 10.4, are exempt. In addition, as authorized in the Phase II small MS4 general permit for Massachusetts, stormwater discharges resulting from the above activities that are subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Storm Water Management Policy as reflected in an order of conditions issued by the Conservation Commission are exempt from compliance with this bylaw.

B. Responsibility for administration.

(1) The Board shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Board may be delegated in writing by the Board to its employees or agents.

(2) Waiver. The Board may waive strict compliance with any requirement of this bylaw or the rules and regulations promulgated hereunder, where:

(a) Such action is allowed by federal, state and local statutes and/or regulations;

(b) Is in the public interest; and

(c) Is not inconsistent with the purpose and intent of this bylaw.

(3) Rules and regulations. The Board may adopt and periodically amend rules and regulations to effectuate the purposes of this bylaw. Failure by the Board to promulgate such rules and regulations shall not have the effect of suspending or invalidating this bylaw.

C. Permits and procedures.

(1) Application. A completed application for a land disturbance permit shall be filed with the Board. A permit must be obtained prior to the commencement of land-disturbing activity that may result in the disturbance of an area of one acre or more. The land disturbance permit application package shall follow the procedures outlined in the Site Plan Review Bylaw (available at the Stoughton Engineering Department).

(2) Entry. Filing an application for a permit grants the Board or its agent permission to enter the site to verify the information in the application and to inspect for compliance with permit conditions.

(3) Other boards. The Board shall notify the Town Clerk of receipt of the application and shall give one copy of the application package to each of the other relevant boards. The submission of a site plan review application shall be considered as a valid submission under this bylaw.

(4) Public hearing. The public hearing required in the Site Plan Review Bylaw shall be considered sufficient satisfaction of this requirement. In the event the proposed project does not require site plan review, the Board shall hold a public hearing within 21 days of the receipt of a complete application and take final action within 21 days from the time of closure of the public hearing, unless such time is extended by agreement between the applicant and the Board. Notice of the public hearing shall be given by publication and by first-class mailing to abutters at least seven days prior to the hearing. The Board shall make the application available for inspection by the public during business hours at the Town Hall, 10 Pearl Street.

(5) Information requests. The applicant shall submit all additional information requested by the Board to issue a decision on the application.

(6) Action by the Board. The Board may:

(a) Approve the land disturbance permit application and issue a permit if it finds that the proposed plan will protect water resources and meets the objectives and requirements of this bylaw;

(b) Approve the land disturbance permit application and issue a permit with conditions, modifications or restrictions that

the Board determines are required to ensure that the project will protect water resources and meets the objectives and requirements of this bylaw;

(c) Disapprove the land disturbance permit application and deny the permit if it finds that the proposed plan will not protect water resources or fails to meet the objectives and requirements of this bylaw.

(7) Failure of the Board to take final action. Failure of the Board to take final action upon an application within the time specified above shall be deemed to be approval of said application. Upon certification by the Town Clerk that the allowed time has passed without the Board action, the land disturbance permit shall be issued by the Board.

(8) Fee structure. Each application must be accompanied by the appropriate application fee as established by the Board. Applicants shall pay review fees as determined by the Board sufficient to cover any expenses connected with the public hearing and review of the land disturbance permit application before the review process commences. The Board is authorized to retain a registered professional engineer or other professional consultant to advise the Board on any or all aspects of the application.

(9) Project changes. The permittee, or their agent, must notify the Board in writing of any change or alteration of a land-disturbing activity authorized in a land disturbance permit before any change or alteration occurs. If the Board determines that the change or alteration is significant, based on the design requirements listed in § 159-8C(10)(b) and accepted construction practices, the Board may require that an amended land disturbance permit application be filed and a public hearing held. If any change or alteration from the land disturbance permit occurs during any land-disturbing activities, the Board may require the installation of interim erosion and sedimentation control measures before approving the change or alteration.

(10) Erosion and sediment control plan.

(a) The erosion and sediment control plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed in Subsection C(10)(b) below.

(b) The design requirements of the erosion and sediment control plan are:

[1] Minimize total area of disturbance;

[2] Sequence activities to minimize simultaneous areas of disturbance;

[3] Minimize peak rate of runoff in accordance with the Massachusetts Stormwater Policy;

[4] Minimize soil erosion and control sedimentation during construction, provided that prevention of erosion is preferred over sedimentation control;

[5] Divert uncontaminated water around disturbed areas;

[6] Maximize groundwater recharge;

[7] Install and maintain all erosion and sediment control measures in accordance with the manufacturer's specifications and good engineering practices;

[8] Prevent off-site transport of sediment;

[9] Protect and manage on- and off-site material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project); comply with applicable federal, state and local laws and regulations, including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control;

[10] Prevent significant alteration of habitats mapped by the Massachusetts Natural Heritage and Endangered Species Program as endangered, threatened or of special concern, estimated habitats of rare wildlife and certified vernal pools, and priority habitats of rare species from the proposed activities;

[11] Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site;

[12] Properly manage on-site construction and waste materials; and

[13] Prevent off-site vehicle tracking of sediments.

(11) Erosion and sediment control plan content. The plan shall contain the information required by the Site Plan Review Bylaw.

(12) Inspection and site supervision.

(a) Preconstruction meeting. Prior to starting clearing, excavation, construction, or land-disturbing activity the applicant, the applicant's technical representative, the general contractor or any other person with authority to make changes to the project shall meet with the Board to review the permitted plans and their implementation.

(b) Board inspection. The Board or its designated agent shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the permittee wherein the work fails to comply with the land disturbance permit as approved. The permit and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Board, shall be maintained at the site during the progress of the work. In order to obtain inspections, the permittee shall notify the Board at least two working days before each of the following events:

[1] Erosion and sediment control measures are in place and stabilized;

[2] Site clearing has been substantially completed;

[3] Rough grading has been substantially completed;

[4] Final grading has been substantially completed;

[5] Close of the construction season; and

[6] Final landscaping (permanent stabilization) and project final completion.

(c) Permittee inspections. The permittee or his/her agent shall conduct and document inspections of all control measures no less than weekly, or as specified in the permit, and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the control plan and the need for maintenance or additional control measures. The permittee or his/her agent shall submit monthly reports to the Board or designated agent in a format approved by the Board.

(d) Access permission. To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Board, its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this bylaw and may make or cause to be made such examinations, surveys or sampling as the Board deems reasonably necessary to determine compliance with the permit.

(13) Surety. the Board may require the permittee to post, before the start of land disturbance activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by Town Counsel and be in an amount deemed sufficient by the Board to ensure that the work will be completed in accordance with the permit. If the project is phased, the Board may release part of the bond as each phase is completed in compliance with the permit, but the bond may not be fully released until the Board has received the final report as required by § 159-8C(14) and issued a certificate of completion.

(14) Final reports. Upon completion of the work, the permittee shall submit a report (including certified as-built construction plans) from a professional engineer (PE), surveyor, or certified professional in erosion and sediment control (CPESC), certifying that all erosion and sediment control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved permit. Any discrepancies should be noted in the cover letter.

(15) Certificate of completion. The issuing authority will issue a letter certifying completion upon receipt and approval of the final reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with this bylaw.

§ 159-9. Postconstruction stormwater management of new developments and redevelopments.

A. Applicability. No person may undertake a construction activity, including clearing, grading and excavation, that results in a land disturbance that will disturb equal to or greater than one acre of land or will disturb less than one acre of land but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one acre of land draining to the Stoughton municipal separate storm sewer system without a permit from the Board. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity or the original purpose of the site.

B. Exemptions.

(1) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.4;

(2) Maintenance of existing landscaping, gardens or lawn areas associated with a single-family dwelling;

(3) The construction of fencing that will not substantially alter existing terrain or drainage patterns;

(4) Construction of utilities other than drainage (gas, water, electric, telephone, etc.) which will not alter terrain or drainage patterns;

(5) As authorized in the Phase II small MS4 general permit for Massachusetts, stormwater discharges resulting from the activities identified in § 159-8A that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Storm Water Management Policy as reflected in an order of conditions issued by the Conservation Commission are exempt from compliance with this bylaw.

C. Permits and procedure.

(1) The application for a stormwater management permit shall consist of submittal of a stormwater management plan to the Board. This stormwater management plan shall contain sufficient information for the Board to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the applicant for reducing adverse impacts from stormwater. The plan shall be designed to meet the Massachusetts Stormwater Management Standards as set forth in Subsection C(2) of this section and DEP Stormwater Management Handbook Volumes I and II. The stormwater management plan shall fully describe the project in drawings, and narrative. It shall represent as-built conditions on the site being permitted and shall contain the following information:

(a) A locus map;

(b) The existing zoning and land use at the site;

(c) The location(s) of existing easements;

(d) The location of existing utilities;

(e) The site's final topography with contours at two-foot intervals;

(f) The site hydrology;

(g) A description and delineation of existing stormwater conveyances, impoundments, and wetlands on and adjacent to the site or into which stormwater flows;

(h) A delineation of one-hundred-year floodplains, if applicable;

(i) The existing vegetation and ground surfaces with runoff coefficients;

(j) A drainage area map showing postconstruction watershed boundaries, drainage area and stormwater flow paths;

(k) A description and drawings of all components of the drainage system, including:

[1] Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization;

[2] All measures for the detention, retention or infiltration of water;

[3] All measures for the protection of water quality;

[4] The structural details for all components of the proposed drainage systems and stormwater management facilities;

[5] Notes on drawings specifying materials used, construction specifications, and typicals.

(l) Location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;

(m) A maintenance schedule for the on-site drainage facilities;

(n) Any other information requested by the Board.

(2) Standards.

(a) Projects shall meet the standards of the Massachusetts Stormwater Management Policy, which currently are as follows:

[1] No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the commonwealth.

[2] Stormwater management systems must be designed so that postdevelopment peak discharge rates do not exceed predevelopment peak discharge rates.

[3] Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the postdevelopment site should approximate the annual recharge rate from the predevelopment or existing site conditions, based on soil types.

[4] For new development, stormwater management systems must be designed to remove 80% of the average annual load (postdevelopment conditions) of total suspended solids (TSS). It is presumed that this standard is met when:

[a] Suitable nonstructural practices for source control and pollution prevention are implemented;

[b] Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and

[c] Stormwater management BMPs are maintained as designed.

[5] Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs (see Stormwater Management Volume I: Stormwater Policy Handbook). The use of infiltration practices without pretreatment is prohibited.

[6] Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas (see Stormwater Management Volume I: Stormwater Policy Handbook). Critical areas are outstanding resource waters (ORWs), shellfish beds, swimming beaches, cold-water fisheries and recharge areas for public water supplies.

[7] Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.

[8] Erosion and sediment controls must be implemented to prevent impacts during disturbance and construction activities.

[9] All stormwater management systems must have an operation and maintenance plan to ensure that systems function as designed.

(b) When one or more of the standards cannot be met, an applicant may demonstrate that an equivalent level of environmental protection will be provided.

D. Operation and maintenance plans. An operation and maintenance plan (O&M plan) is required at the time of application for all projects. The maintenance plan shall be designed to ensure compliance with the permit, this bylaw and that the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, are met in all seasons and throughout the life of the system. The Board shall make the final decision of what maintenance option is appropriate in a given situation. The Board will consider natural features, proximity of site to water bodies and wetlands, extent of impervious surfaces, size of the site, the types of stormwater management structures, and potential need for ongoing maintenance activities when making this decision. The operation and maintenance plan shall remain on file with the Board, attached to the stormwater management plan, and shall be an ongoing requirement. The O&M Plan shall include:

(1) The name(s) of the owner(s) for all components of the system.

(2) Maintenance agreements that specify:

(a) The names and addresses of the person(s) responsible for operation and maintenance.

(b) The person(s) responsible for financing maintenance and emergency repairs.

(c) A maintenance schedule for all drainage structures, including swales and ponds.

(d) A list of easements with the purpose and location of each.

(e) The signature(s) of the owner(s).

(3) Stormwater management easement(s).

(a) Stormwater management easements shall be provided by the property owner(s) as necessary for:

[1] Access for facility inspections and maintenance.

[2] Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the one-hundred-year storm event.

[3] Direct maintenance access by heavy equipment to structures requiring regular cleanout.

(b) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.

(c) Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Board.

(d) Easements shall be recorded with the Norfolk County Registry of Deeds prior to issuance of a certificate of completion by the Board.

E. Changes to operation and maintenance plans.

(1) The owner(s) of the stormwater management system must notify the Board of changes in ownership or assignment of financial responsibility.

(2) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this bylaw by mutual agreement of the Board and the responsible parties. Amendments must be in writing and signed by all responsible parties. Responsible parties shall include owner(s), persons with financial responsibility, and persons with operational responsibility.

F. Surety. The Board may require the permittee to post, before the start of land disturbance or construction activity, a surety bond, irrevocable

letter of credit, cash, or other acceptable security. The form of the bond shall be approved by Town Counsel and be in an amount deemed sufficient by the Board to ensure that the work will be completed in accordance with the permit. If the project is phased, the Board may release part of the bond as each phase is completed in compliance with the permit, but the bond may not be fully released until the Board has received the final inspection report as required by § 159-8C(14) and issued a certificate of completion.

G. Inspections. The Board shall inspect the project site at the following stages:

(1) Initial site inspection: prior to approval of any plan.

(2) Erosion control inspection: to ensure erosion control practices are in accord with the filed plan.

(3) Bury inspection: prior to backfilling of any underground drainage or stormwater conveyance structures.

(4) Final inspection.

(a) After the stormwater management system has been constructed and before the surety has been released, the applicant must submit a record plan detailing the actual stormwater management system as installed. The Board shall inspect the system to confirm its as-built features. This inspector shall also evaluate the effectiveness of the system in an actual storm. If the inspector finds the system to be adequate he shall so report to the Board, which will issue a certificate of completion.

(b) If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the stormwater management plan, it shall be corrected by the permittee before the performance guarantee is released. If the permittee fails to act, the Town may use the surety bond to complete the work. Examples of inadequacy shall be limited to errors in the infiltrative capability, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins.

H. Waivers.

(1) The Board may waive strict compliance with any requirement of this bylaw or the rules and regulations promulgated hereunder, where;

(a) Such action is allowed by federal, state and local statutes and/or regulations,

(b) Is in the public interest; and

(c) Is not inconsistent with the purpose and intent of this bylaw.

(2) Any applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of the bylaw does not further the purposes or objectives of this bylaw.

(3) All waiver requests shall be discussed and voted on at the public hearing for the project.

(4) If, in the Board's opinion, additional time or information is required for review of a waiver request, the Board may continue a hearing to a date certain announced at the meeting. In the event the applicant objects to a continuance or fails to provide requested information, the waiver request shall be denied.

I. Certificate of completion. The Board will issue a letter certifying completion upon receipt and approval of the final inspection reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with this bylaw.

J. Town acceptance of drainage and stormwater structures and systems. When a developer requests the Town to accept a drainage system, stormwater management system, and/or a detention basin for a subdivision of three or more housing units, or for a commercial/ industrial land development of one acre or larger, the Town shall have the option to refuse or accept it. If the Town accepts the basin or system, a contribution to the Stormwater Management Revolving Fund shall be made which shall be equal to $1,000 for each drainage/ stormwater management system and $2,500 for every acre or portion thereof in the detention basins to compensate the Town for ongoing maintenance. The minimum contribution for any system or basin, regardless of size, shall be $5,000.

§ 159-10. Enforcement.

The Board or an authorized agent of the Board shall enforce this bylaw, regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

A. Civil relief. If a person violates the provisions of this bylaw, regulations, permit, notice, or order issued thereunder, the Board 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.

(1) The Board or an authorized agent of the Board may issue a written order to enforce the provisions of this bylaw 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.

(2) 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.

(3) Within 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 appropriations incurred by the Town, including administrative appropriations. The violator or property owner may file a written protest objecting to the amount or basis of appropriations with the Board within 30 days of receipt of the notification of the appropriations incurred. If the amount due is not received by the expiration of the time in which to file a protest or within 30 days following a decision of the Board affirming or reducing the appropriations, or from a final decision of a court of competent jurisdiction, the appropriations shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said appropriations. Interest shall begin to accrue on any unpaid appropriations at the statutory rate provided in MGL c. 59, § 57, after the 31st day at which the appropriations first become due.

C. Criminal penalty. Any person who violates any provision of this bylaw, regulation, order or permit issued thereunder shall be punished by a fine of not more than $100. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

D. Noncriminal disposition. As an alternative to criminal prosecution, the Town of Stoughton may elect to utilize the noncriminal disposition procedure set forth in MGL c. 40, § 21D. The Board, or its authorized agent, shall be the enforcing person. The penalty for the first violation shall be $100. The penalty for the second violation shall be $200. The penalty for the third and subsequent violations shall be $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

E. Entry to perform duties under this bylaw. To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Board, its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this bylaw and regulations and may make or cause to be made such examinations, surveys or sampling as the Board deems reasonably necessary.

F. Appeals. The decisions or orders of the Board shall be final. Further relief shall be to a court of competent jurisdiction.

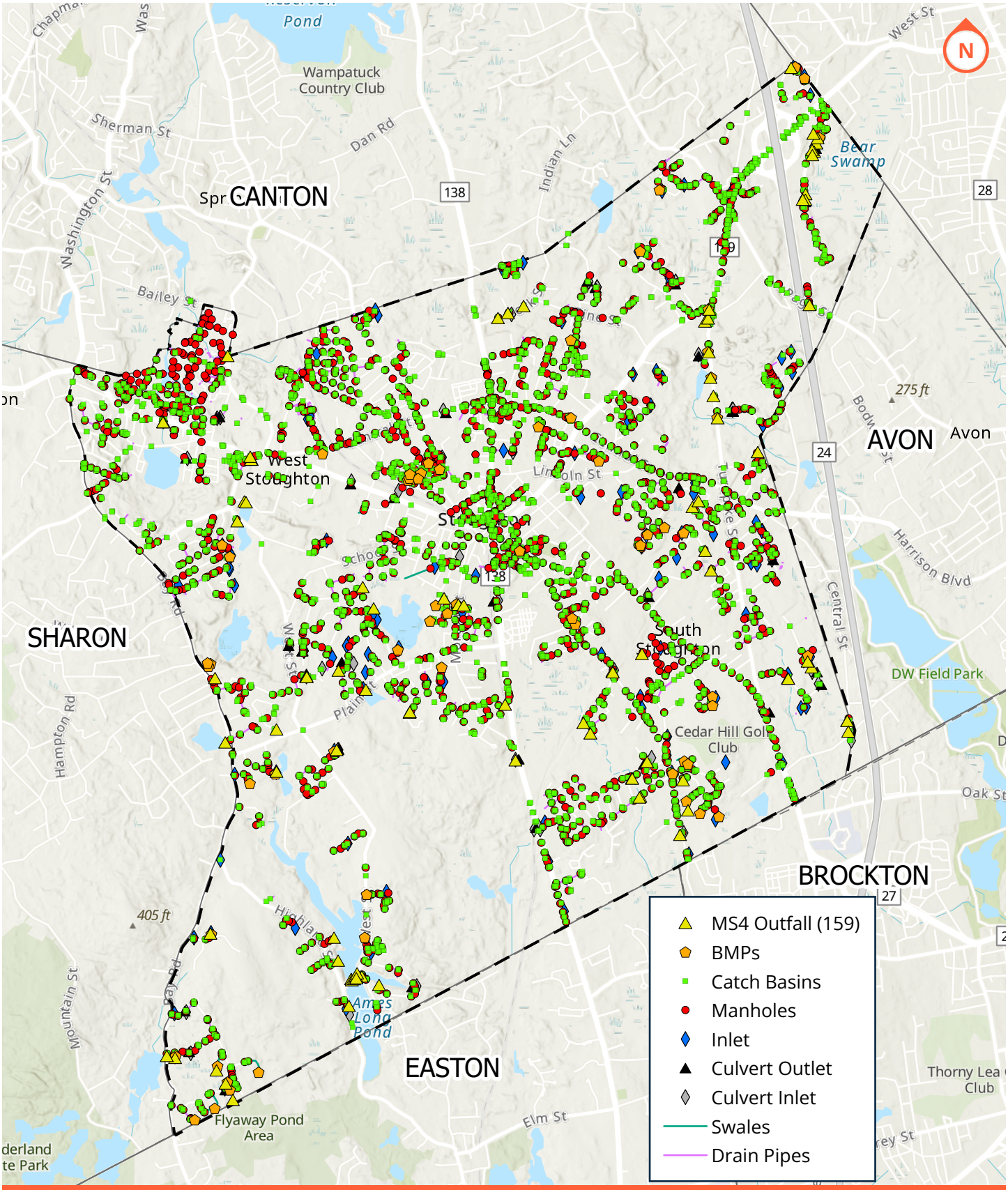
G. Remedies not exclusive. The remedies listed in this bylaw are not exclusive of any other remedies available under any applicable federal, state or local law.

§ 159-11. Severability.

The provisions of this bylaw are hereby declared to be severable. If any provision, paragraph, sentence, or clause of this bylaw 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 bylaw.

APPENDIX B

Stormwater System Mapping



ENVIRONMENTAL PARTNERS
An Apex Company

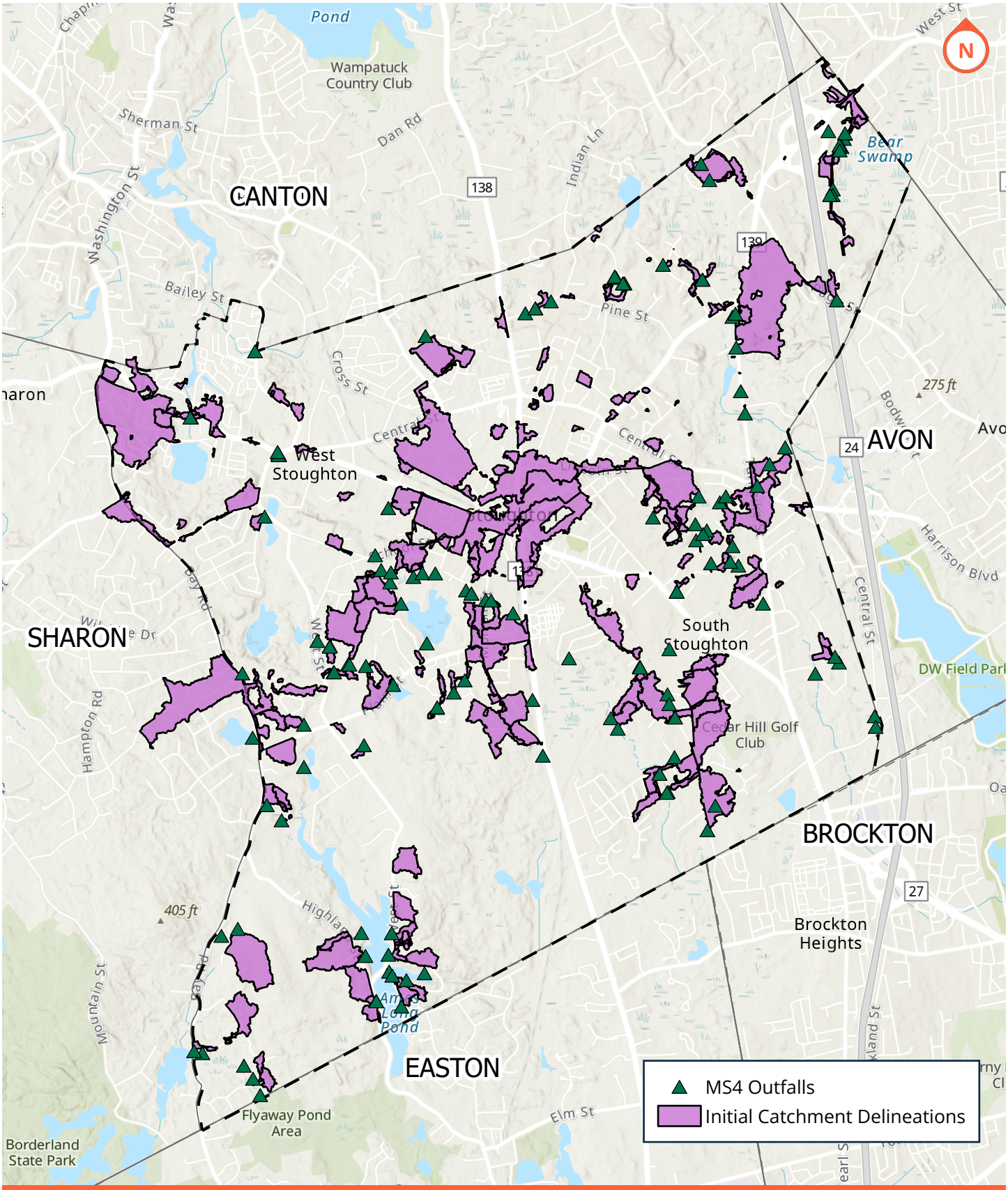
Appendix B

Stormwater System

Stoughton, Massachusetts

APPENDIX C

Catchment Delineation Mapping and Ranking Matrix



ENVIRONMENTAL PARTNERS
— An Apex Company —

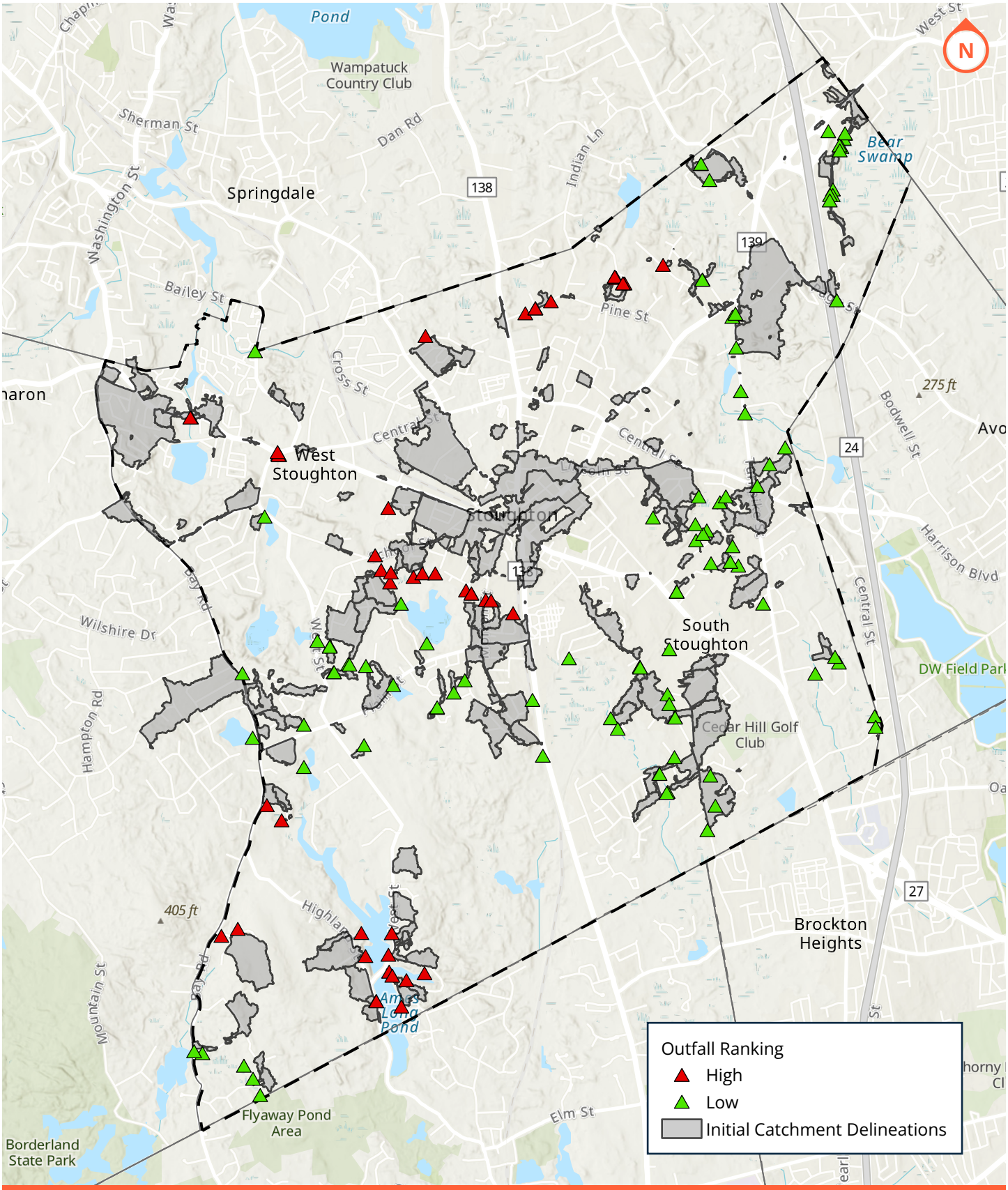
Appendix C

Initial Catchment Delineations

Stoughton, Massachusetts

0 2,500 5,000 10,000 Feet

1:50,000



ENVIRONMENTAL PARTNERS
An Apex Company

Appendix C

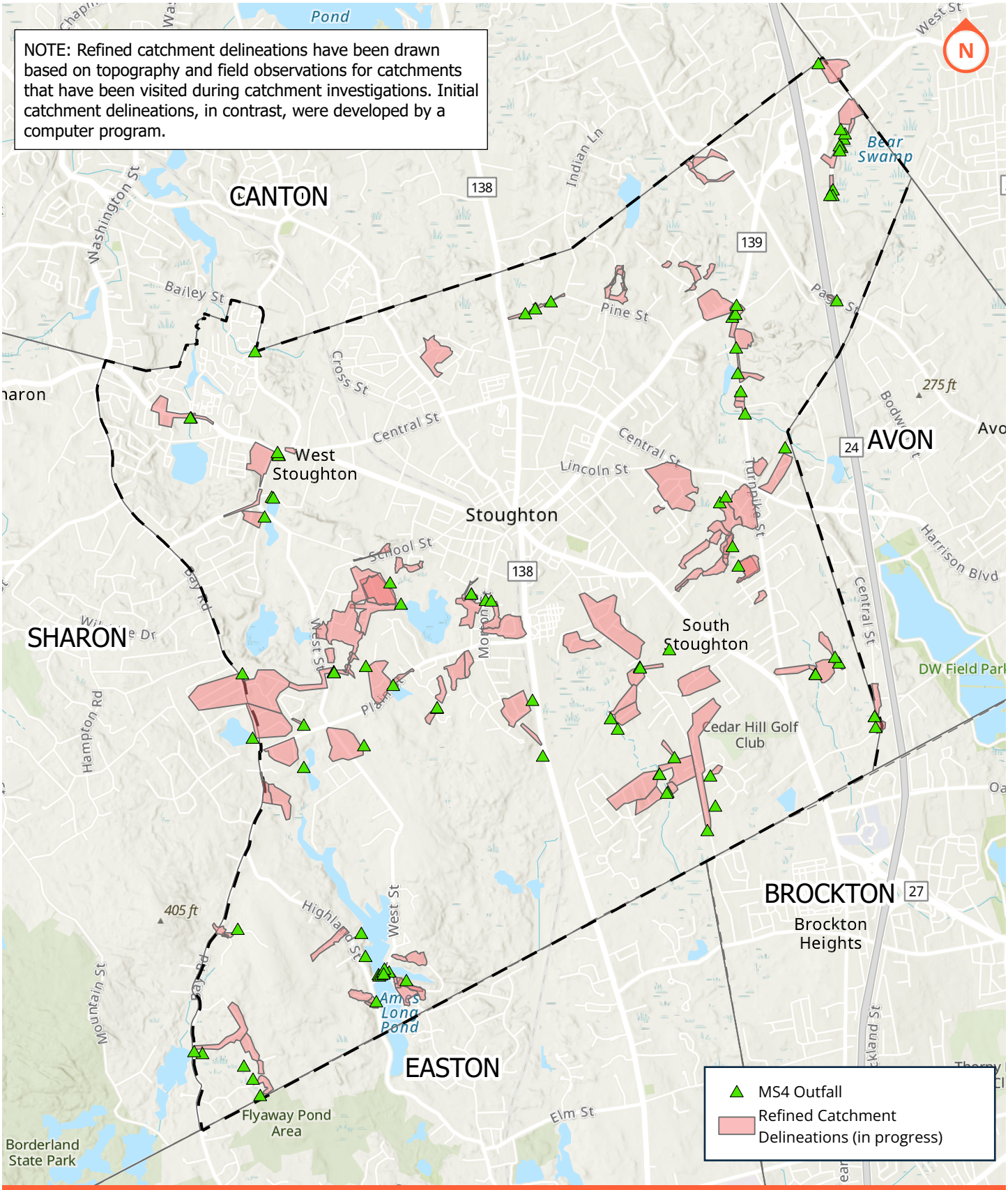
Catchment Ranking

Stoughton, Massachusetts

0 2,500 5,000 10,000

1:50,000

Feet



ENVIRONMENTAL PARTNERS
— An Apex Company —

Appendix C

Refined Catchment Delineations

Stoughton, Massachusetts

Stormwater Outfall Ranking Table

Stoughton, MA

September 2023

			Catchment Scores						Outfall Scores			IDDE Resits						
Catchment ID	**Receiving Water**	**Outfall ID**	**Density of Generating Sites**	**Age of Development/ Infrastructure**	**Historic Combined Sewers or Converted Septic?**	**Aging Septic?**	**Culverted Streams?**	**Discharging to Area of Concern to Public Health? (Catchment)**	**Previous Screening Results Indicate Likely Sewer Input?**	**Frequency of Past Discharge Complaints**	**Receiving Water Quality**				**Outfall Score**	**Catchment Score**	**Outfall Ranking ***	**Catchment Ranking ***
		Information Source	Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	Impaired Waters List	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results	Catchment Investigation Status				
		Scoring Criteria	High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Category 4a = 2 Category 5 = 1 Others = 0							
B	Lovett Brook	OF-105	1	0	0	2	0	0	0	0	0		2020 - Dry	Complete	3	3	Low	Low
B	Lovett Brook	OF-105A (NEW)	1	0	0	2	0	0	0	0	0			Complete	3	3	Low	Low
B	Lovett Brook	OF-105B (NEW)	1	0	0	2	0	0	0	0	0			Complete	3	3	Low	Low
E	Unnamed Tributary to Beaver Brook	OF-108	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	Complete	0	0	Low	Low
F	Unnamed Wetlands to Beaver Brook	OF-109	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	Complete	0	0	Low	Low
J	Dorchester Brook	OF-113	0	0	0	0	0	0	0	0	0	2016 - Dry	2021 - Dry	Complete	0	0	Low	Low
Z	Unnamed Tributary near Woods Pond	OF-144	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	0	0	Low	Low
AC	Unnamed Tributary to Steep Hill Brook	OF-148	0	0	0	0	0	0	0	0	1	2016 - Dry	2019 - Sampled	Complete	1	1	High	Low
AF	Unnamed Tributary to Steep Hill Brook	OF-150	0	0	0	0	2	1	0	0	1	2016 - Flow	2019 - Dry	Complete	4	4	High	High
AG	Unnamed Tributary to Steep Hill Brook	OF-151	0	0	0	0	2	1	0	0	1	2016 - Dry	2019 - Dry	Planned	4	4	High	High
AH	Unnamed Tributary to Town Pond	OF-152	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
AH	Unnamed Tributary to Town Pond	OF-153	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	Complete	0	0	Low	Low
AI	Unnamed Tributary to Town Pond	OF-154	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	Complete - needs Town follow up	0	0	Low	Low
AK	Unnamed Tributary to Steep Hill Brook	OF-156	0	0	0	2	0	0	0	0	1		2019 - Dry	Complete	3	3	High	Low
AN	Unnamed Tributary to Ames Long Pond	OF-159	0	0	0	2	0	0	0	0	1	2016 - Dry	2019 - Dry	Complete	3	3	High	Low
AV	Beaver Meadow Brook	OF-192	0	0	0	0	0	0	0	0	1			Complete	1	1	High	Low
AW	Beaver Meadow Brook	OF-193	0	0	0	0	0	0	0	0	1	2016 - Dry	2019 - Dry	Complete	1	1	High	Low
AW	Beaver Meadow Brook	OF-195	0	0	0	0	0	0	0	0	1	2016 - Dry	2016 - Dry	Initial Investigation Complete	1	1	High	Low
BE	Ames Long Pond	OF-202	0	0	0	0	0	1	0	0	1		2021 - Dry	Complete	2	2	High	Low
BF	Ames Long Pond	OF-203	0	0	0	0	0	0	0	0	1		2021 - Dry	Complete	1	1	High	Low
BG	Ames Long Pond	OF-204	0	0	0	2	0	0	0	0	1		2021 - Dry	Complete	3	3	High	Low
BJ	Ames Long Pond	OF-207	0	0	0	2	0	0	0	0	1		2021 - Sampled	Complete	3	3	High	Low
BK	Unnamed Tributary to Town Pond	OF-209	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
BN	Ames Long Pond	OF-211	0	0	0	2	0	0	0	0	1		2021 - Sampled	Incomplete	3	3	High	Low
BR	Unnamed Tributary to Beaver Brook	OF-217	0	0	0	0	0	0	0	0	0		2021 - Dry	Incomplete	0	0	Low	Low
BU	Unnamed Tributary near Woods Pond	OF-226	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
BW	Unnamed Tributary to Dorchester Brook	OF-231	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
AA	Woods Pond	OF-242	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
CD	Unnamed Wetlands to Beaver Brook	OF-243	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
CE	Unnamed Wetlands to Beaver Brook	OF-244	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
CF	Unnamed Wetlands to Beaver Brook	OF-245	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
CG	Unnamed Tributary to Beaver Brook	OF-246	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
CH	Unnamed Tributary to Ames Long Pond	OF-249	0	0	0	2	0	0	0	0	1		2019 - Dry	Complete	3	3	High	Low
CI	Unnamed Tributary to Ames Long Pond	OF-251	0	0	0	2	0	0	0	0	1		2021 - Dry	Complete	3	3	High	Low
OE	Lovett Brook	OF-265	1	0	0	2	0	0	0	0	0			Planned			Low	Low
CR	Unnamed Tributary To Beaver Brook	OF-279	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
CV	Beaver Meadow Brook	OF-286	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
KF	Plain Street Pond	OF-300	0	0	0	2	0	0	0	0	0		2021 - Dry	Complete	2	2	Low	Low
DG	Unnamed Tributary To Beaver Brook	OF-304	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
DI	Beaver Meadow Brook	OF-306	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
DN	Woods Pond	OF-322	0	0	0	0	0	0	0	0	0		2021 - Sampled	Initial Investigation Complete	0	0	Low	Low
DO	Unnamed Tributary to Steep Hill Brook	OF-323	0	0	0	0	0	0	0	0	1		2019 - Sampled	Complete	1	1	High	Low
DP	Unnamed Tributary to Steep Hill Brook	OF-324	0	0	0	0	0	0	0	0	1		2021 - Sampled	Complete - needs Town follow up	1	1	High	Low
DS	Unnamed Wetlands to Three Swamp Brook	OF-330	0	0	0	2	0	0	0	0	0		2020 - Dry	Complete	2	2	Low	Low
DT	Unnamed Wetlands to Three Swamp Brook	OF-331	1	0	0	0	0	0	0	0	0		2020 - Dry	Complete	1	1	Low	Low
DU	Beaver Meadow Brook	OF-334	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
DJ	Unnamed Tributary to Town Pond	OF-342	0	0	0	2	0	0	0	0	0		2021 - Dry	Complete	2	2	Low	Low
EC	Unnamed Tributary to Steep Hill Brook	OF-350	0	0	0	0	0	0	0	0	1		2019 - Dry	Incomplete	1	1	High	Low
ED	Unnamed Tributary to Ames Long Pond	OF-351	0	0	0	2	0	0	0	0	1		2021 - Dry	Complete	3	3	High	Low
EE	Unnamed Wetlands to Three Swamp Brook	OF-354	0	0	0	2	0	0	0	0	0		2020 - Dry	Complete	2	2	Low	Low
EF	Unnamed Wetlands to Three Swamp Brook	OF-355	1	0	0	2	0	0	0	0	0		2020 - Dry	Complete	3	3	Low	Low
EG	Unnamed Wetlands to Three Swamp Brook	OF-356	1	0	0	0	0	0	0	0	0		2020 - Dry	Complete	1	1	Low	Low
EH	Unnamed Wetlands to Three Swamp Brook	OF-357	1	0	0	0	0	0	0	0	0		2020 - Dry	Complete	1	1	Low	Low
EI	Unnamed Wetlands to Three Swamp Brook	OF-358	1	0	0	2	0	0	0	0	0		2020 - Dry	Complete	3	3	Low	Low
EJ	Unnamed Wetlands to Three Swamp Brook	OF-359	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
EN	Unnamed Wetlands to Beaver Brook	OF-366	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low

Outfalls dischraging to Category 4a, 4c, or 5 waterbodies are ranked High

Outfalls with sampling indicating likely sewer input are ranked High

ENVIRONMENTAL PARTNERS
— An Apex Company —

Stormwater Outfall Ranking Table
Stoughton, MA
July 2023

Catchment ID	Receiving Water	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Converted Septic?	Aging Septic?	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Receiving Water Quality	IDDE Resits			Outfall Score	Catchment Score	Outfall Ranking *	Catchment Ranking *
		Information Source	Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	Impaired Waters List	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results	Catchment Investigation Status				
		Scoring Criteria	High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Category 4a = 2 Category 5 = 1 Others = 0							
EO	Unnamed Wetlands to Beaver Brook	OF-367	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
EU	Ames Long Pond	OF-376	0	0	0	2	0	1	0	0	1		2019 - Dry	Complete	4	4	High	High
EV	Ames Long Pond	OF-378	0	0	0	2	0	1	0	0	1		2021 - Sampled	Complete	4	4	High	High
EW	Beaver Meadow Brook	OF-38	0	0	0	0	0	0	0	0	1	2016 - Dry	2019 - Dry	Complete	1	1	High	Low
EX	Unnamed Tributary to Dorchester Brook	OF-380	0	0	0	0	0	0	0	0	0		2021 - Dry	Initial Investigation Complete	0	0	Low	Low
EZ	Beaver Meadow Brook	OF-39	0	0	0	0	0	0	0	0	1	2016 - Dry	2019 - Dry	Complete	1	1	High	Low
GJ	Briggs Pond	OF-399	0	0	0	2	0	0	0	0	0		2020 - Dry	Complete	2	2	Low	Low
FG	Unnamed Tributary to Beaver Meadow Brook	OF-42	0	0	0	0	0	0	0	0	1	2016 - Dry	2020 - Dry	Complete - needs Town follow up	1	1	High	Low
FK	Unnamed Tributary to Beaver Brook	OF-426	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
FO	Unnamed Tributary to Beaver Brook	OF-431	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
FO	Unnamed Tributary to Beaver Brook	OF-432	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete	0	0	Low	Low
FV	Unnamed Tributary To Beaver Brook	OF-444	0	0	0	2	0	0	0	0	0		2020 - Dry	Complete - needs Town follow up	2	2	Low	Low
FX	Unnamed Tributary to Steep Hill Brook	OF-450	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
FY	Unnamed Tributary to Town Pond	OF-453	0	0	0	0	0	0	0	0	0		2021 - Sampled	Complete	0	0	Low	Low
FZ	Beaver Meadow Brook	OF-455	0	0	0	0	0	0	0	0	1		2021 - Dry	Complete	1	1	High	Low
GA	Beaver Meadow Brook	OF-456	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
GC	Unnamed Tributary to Beaver Brook	OF-458	0	0	0	0	0	0	0	0	0		2021 - Dry	Incomplete	0	0	Low	Low
GD	Unnamed Tributary to Beaver Brook	OF-459	0	0	0	0	0	0	0	0	0		2021 - Dry	Incomplete	0	0	Low	Low
GH	Unnamed Tributary to Dorchester Brook	OF-463	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
GG	Unnamed Tributary to Dorchester Brook	OF-464	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
GH	Unnamed Tributary to Steep Hill Brook	OF-465	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
GJ	Briggs Pond	OF-468	0	0	0	2	0	0	0	0	0		2021 - Dry	Complete	2	2	Low	Low
GK	Unnamed Tributary to Steep Hill Brook	OF-469	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
GP	Town Pond	OF-478	0	0	0	0	0	0	0	0	0		2020 - Dry	Initial Investigation Complete	0	0	Low	Low
HI	Unnamed Tributary to Beaver Brook	OF-516	1	0	0	0	0	0	0	0	0		2020 - Dry	Initial Investigation Complete	1	1	Low	Low
HQ	Dorchester Brook	OF-54	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	Complete	0	0	Low	Low
GB	Ames Long Pond	OF-547	0	0	0	2	0	1	0	0	1		2019 - Dry	Complete	4	4	High	High
HU	Dorchester Brook	OF-55	0	0	0	0	0	0	0	0	0		2020 - Dry	Initial Investigation Complete	0	0	Low	Low
HW	Ames Long Pond	OF-553	0	0	0	2	0	1	0	0	1		2019 - Dry	Complete	4	4	High	High
HW	Ames Long Pond	OF-553O-1 (NEW)	0	0	0	2	0	1	0	0	1			Incomplete	4	4	High	High
HW	Ames Long Pond	OF-553S-1 (NEW)	0	0	0	2	0	1	0	0	1			Complete	4	4	High	High
HW	Ames Long Pond	OF-553S-2 (NEW)	0	0	0	2	0	1	0	0	1			Complete	4	4	High	High
HW	Ames Long Pond	OF-553S-3 (NEW)	0	0	0	2	0	1	0	0	1			Complete	4	4	High	High
HW	Ames Long Pond	OF-553S-4 (NEW)	0	0	0	2	0	1	0	0	1			Complete	4	4	High	High
HW	Ames Long Pond	OF-553S-5 (NEW)	0	0	0	2	0	1	0	0	1			Complete	4	4	High	High
HX	Ames Long Pond	OF-553S-6 (NEW)	0	0	0	2	0	1	0	0	1		2019 - Dry	Complete	4	4	High	High
HX	Ames Long Pond	OF-554	0	0	0	2	0	1	0	0	1			Complete	4	4	High	High
IB	Dorchester Brook	OF-56	0	0	0	0	0	0	0	0	0	2016 - Flow	2019 - Dry	Complete	0	0	Low	Low
IB	Town Pond	OF-560(NEW)	0	0	0	0	0	0	0	0	0			Complete	0	0	Low	Low
IB	Town Pond	OF-560S(NEW)	0	0	0	0	0	0	0	0	0			Complete	0	0	Low	Low
IE	Unnamed Tributary to Dorchester Brook	OF-57	0	0	0	0	0	0	0	0	0		2019 - Dry	Complete	0	0	Low	Low
IM	Unnamed Tributary to Steep Hill Brook	OF-580	0	0	0	0	2	1	0	0	1		2021 - Sampled	Complete	4	4	High	High
IR	Unnamed Tributary to Beaver Brook	OF-587	0	0	0	0	0	0	0	0	0		2021 - Sampled	Complete	0	0	Low	Low
IS	Unnamed Wetlands to Beaver Brook	OF-588	0	0	0	2	0	0	0	0	0	2015 - Dry	2015 - Dry	Complete	2	2	Low	Low
IU	Unnamed Tributary near Woods Pond	OF-59	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	0	0	Low	Low
IY	Unnamed Tributary near Woods Pond	OF-60	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	0	0	Low	Low
JD	Unnamed Tributary to Beaver Brook	OF-610	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low
JF	Unnamed Tributary (MA73-32)	OF-612	0	0	0	0	0	0	0	0	1		2019 - Dry	Complete	1	1	High	Low
JH	Beaver Brook	OF-616	0	0	0	2	0	0	0	0	0		2021 - Dry	Initial Investigation Complete	2	2	Low	Low
DS	Unnamed Wetlands to Three Swamp Brook	OF-634	1	0	0	0	0	0	0	0	0		2020 - Dry	Planned	1	1	Low	Low
JM	Unnamed Wetlands to Beaver Brook	OF-636	0	0	0	0	0	0	0	0	0		2020 - Dry	Complete - needs Town follow up	0	0	Low	Low
JF	Unnamed Tributary to Steep Hill Brook	OF-64	0	0	0	0	0	0	0	0	1	2016 - Dry	2016 - Dry	Complete	1	1	High	Low
JN	Unnamed Tributary to Town Pond	OF-641	0	0	0	0	0	0	0	0	0	2015 - Dry	2021 - Dry	Complete	0	0	Low	Low
JP	Coweeset Brook	OF-643	0	0	0	0	0	0	0	0	0			Complete	0	0	Low	Low
JS	Unnamed Tributary (MA73-32)	OF-65	0	0	0	0	0	0	0	0	1	2016 - Dry	2019 - Dry	Complete and additional Town assistance needed.	1	1	High	Low
JU	Unnamed Tributary to Town Pond	OF-653	0	0	0	0	0	0	0	0	0	2015 - Dry	2015 - Dry	Complete	0	0	Low	Low
JZ	Unnamed Tributary to Town Pond	OF-664	0	0	0	0	0	0	0	0	0		2021 - Dry	Complete	0	0	Low	Low

Outfalls dischraging to Category 4a, 4c, or 5 waterbodies are ranked High
Outfalls with sampling indicating likely sewer input are ranked High

Stormwater Outfall Ranking Table
Stoughton, MA
July 2023

Catchment ID	Receiving Water	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Converted Septic?	Aging Septic?	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Receiving Water Quality	IDDE Resits			Outfall Score	Catchment Score	Outfall Ranking *	Catchment Ranking *
Information Source			Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	Impaired Waters List	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results	Catchment Investigation Status				
Scoring Criteria			High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Category 4a = 2 Category 5 = 1 Others = 0							
OU	Unnamed Tributary To Beaver Brook	OF-669	0	0	0	0	0	0	0	0	0		2021 - Dry	Incomplete	0	0	Low	Low
KC	Unnamed Tributary to Steep Hill Brook	OF-671	0	0	0	0	0	1	0	0	1		2019 - Dry	Complete	2	2	High	Low
KI	Plain Street Pond	OF-69	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	2	2	Low	Low
LD	Unnamed Wetlands near Lovett Brook	OF-710	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	2	2	Low	Low
LO	Unnamed Pond near Woods Pond	OF-723	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	0	0	Low	Low
OJ	Unnamed Tributary to Unnamed Tributary (MA73-32)	OF-728	1	0	0	0	2	0	0	0	1		2022 - Sampled	Planned	4	4	High	High
MA	Unnamed Tributary to Bolivar Pond	OF-735	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	2	2	Low	Low
ME	Unnamed Pond	OF-739	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	Initial Investigation Complete	2	2	Low	Low
JF	Unnamed Tributary to Steep Hill Brook	OF-742	0	0	0	0	0	0	0	0	1	2016 - Dry	2016 - Dry	Complete	1	1	High	Low
MG	Unnamed Wetlands near Lovett Brook	OF-744	0	0	0	2	0	0	0	0	0	2016 - Dry	2019 - Dry	Complete	2	2	Low	Low
MH	Unnamed Tributary to Beaver Brook	OF-745	0	0	0	0	0	0	0	0	0	2016 - Flow	2019 - Dry	Complete - needs Town follow up	0	0	Low	Low
MJ	Steep Hill Brook	OF-747	0	0	0	0	0	0	0	0	1	2016 - Dry	2016 - Dry	Complete	1	1	High	Low
MK	Steep Hill Brook	OF-748	0	0	0	0	0	0	0	0	1	2016 - Flow	2019 - Dry	Initial Investigation Complete	1	1	High	Low
IA	Coweeset Brook	OF-751	0	0	0	0	0	0	0	0	0			Complete	0	0	Low	Low
MO	Unnamed Tributary to Beaver Brook	OF-753	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	Planned	2	2	Low	Low
MP	Unnamed Tributary To Beaver Brook	OF-754	1	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	1	1	Low	Low
MQ	Unnamed Tributary to Beaver Brook	OF-755	0	0	0	0	0	0	0	0	0	2016 - Flow	2019 - Dry	Planned	0	0	Low	Low
MR	Unnamed Tributary to Beaver Brook	OF-756	0	0	0	0	0	0	0	0	0	2016 - Flow	2021 - Dry	Planned	0	0	Low	Low
JF	Unnamed Tributary to Steep Hill Brook	OF-757	0	0	0	0	0	0	0	0	1	2016 - Dry	2016 - Dry	Planned	1	1	High	Low
MT	Beaver Meadow Brook	OF-759	0	0	0	0	0	0	0	0	1	2016 - Dry	2020 - Dry	Complete	1	1	High	Low
MX	Unnamed Tributary to Beaver Brook	OF-762	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	Planned	0	0	Low	Low
MY	Dry Pond	OF-764	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	Complete	2	2	Low	Low
ND	Town Pond	OF-769	0	0	0	2	0	0	0	0	0		2021 - Dry	Initial Investigation Complete	2	2	Low	Low
NE	Ames Long Pond	OF-77	0	0	0	0	0	0	0	0	1	2016 - Dry	2021 - Sampled	Planned	1	1	High	Low
NN	Beaver Brook	OF-788	0	0	0	0	0	0	0	0	0		2021 - Sampled	Complete	0	0	Low	Low
NS	Unnamed Wetlands	OF-792	1	0	0	0	0	0	0	0	0		2021 - Sampled	Complete	1	1	Low	Low
OC	Unnamed Tributary to Steep Hill Brook	OF-793	1	0	0	0	2	0	0	0	1		2022 - Sampled	Planned	4	4	High	High
HI	Unnamed Tributary to Beaver Brook	OF-801	1	0	0	0	0	0	0	0	0		2020 - Dry	Complete	1	1	Low	Low
OD	Unnamed Tributary	OF-803	0	0	0	2	0	0	0	0	0		2022 - Dry	Complete	2	2	Low	Low
OF	Unnamed Tributary	OF-804	0	0	0	2	0	0	0	0	0		2022 - Dry	Complete	2	2	Low	Low
OG	Unnamed Tributary	OF-805	0	0	0	0	0	0	0	0	0		2022 - Dry	Complete	0	0	Low	Low
OH	Unnamed Tributary to Beaver Brook	OF-806	0	0	0	0	0	0	0	0	0		2022 - Sampled	Planned	0	0	Low	Low
OI	Unnamed Tributary near Dorchester Brook	OF-807	0	0	0	0	0	0	0	0	0		2022 - Dry	Complete	0	0	Low	Low
OK	Beaver Brook	OF-809	1	0	0	0	0	0	0	0	0		2022 - Dry	Complete	1	1	Low	Low
OL	Unnamed Tributary to Beaver Brook	OF-810	0	0	0	0	0	0	0	0	0		2022 - Dry	Complete	0	0	Low	Low
HW	Beaver Pond	OF-812 (NEW)	1	0	0	0	0	0	0	0	0			Complete	1	1	Low	Low
OU	Unnamed Tributary To Beaver Brook	OF-813 (NEW)	0	0	0	0	0	0	0	0	0			Complete	0	0	Low	Low
OU	Unnamed Tributary To Beaver Brook	OF-814 (NEW)	0	0	0	0	0	0	2	0	0			Planned	2	2	Priority	Low
OE	Unnamed Wetlands near Lovett Brook	OF-98	1	0	0	2	0	0	0	0	0	2016 - Dry	2020 - Dry	Complete	3	3	Low	Low

Town confirmed no previous combined system on 8/23/2022

Outfalls dischraging to Category 4a, 4c, or 5 waterbodies are ranked High
Outfalls with sampling indicating likely sewer input are ranked High

ENVIRONMENTAL PARTNERS
— An Apex Company —

APPENDIX D

Field Forms and Hyperlinks to Laboratories and Field Services Companies

Date: _____

Weather Observations: _____

Staff Onsite: _____

Photos: _____

Stoughton Storm Drain Mapping Form

Structure #:_____

Map #: _____

Street Name: _____

Nearest Structure: _____
(address, bldg, utility pole, etc)

Type of Structure: _____
(outfall, culvert, inlet, etc)

Headwall?: _____
(Y/N; concrete, stone, rip rap, none)

Material: _____
(concrete, concrete FES, corrugated metal, plastic, pvc, clay, cast iron, etc)

Size & Shape of Structure: _____
_____
(diameter, width/height)

Invert (top of headwall to bottom inside of pipe): _____
_____

Pipe Condition/headwall condition: _____
_____

Connectivity: _____
(from MH, CB, culvert, other)

Date: _____

Structure Number: _____

Is Crown (top inside of pipe) Above or Below Surface Water?: _____

Dry Weather Flow Conditions: _____
(weather, ground condition, flowing?)

Description of Visual Characteristics or Odors: _____

_____
(aesthetics, deposits/stains, erosion, vegetation)

<u>Field Screening Data:</u>

pH: _____
Temperature: _____
Sp. Conduct.: _____
Turbidity: _____

Flag as Future Sample Location? (Y/N): _____

Sample collected for lab analysis? ** (Y/N): _____

Lab Sample ID: _____
Analyses: _____
Sampling Date/Time: _____
**** (ensure SOP for stormwater grab sampling has been followed, see Appendix F of IDDE Plan)**

<u>Additional comments/Sketch:</u>

Appendix D – Links to Relevant Laboratories and Field Services Companies

Local Massachusetts State Certified Laboratories:

- ESS Laboratory; Cranston, RI http://www.esslaboratory.com/
- Alpha Analytical Labs; Westborough, MA https://alphalab.com/
- G&L Laboratories; Quincy, MA http://www.gllab.com/
- MassDEP Searchable Laboratory Certification Listing https://eeaonline.eea.state.ma.us/DEP/Labcert/Labcert.aspx

Local Field Equipment Suppliers

- U.S. Environmental; Waltham, MA https://usenvironmental.com/
- Pine Environmental; Woburn, MA http://www.pine-environmental.com/locations/?list
- Hach Company Analytical Instruments https://www.hach.com/

CCTV/Video Inspection Companies

- National Water Main Cleaning Co.; Canton, MA https://nwmcc.com/
- BMC Corp.; Billerica, MA https://pipejetter.com/cctv-inspection.html
- Inland Waters Inc.; Johnston, RI http://www.inlandwatersinc.com/

APPENDIX E

Outfall Sampling and Catchment Investigation Results

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: August 23, 2022

To Mark J. Tisdelle, P.E. – Town Engineer, Town of Stoughton

From Scott Turner, P.E. – Director of Planning, Environmental Partners

CC Laurence Langlois – GIS Manager/Stormwater Coordinator, Town of Stoughton
Paul Giffune – Acting Public Works Director, Town of Stoughton

Subject Year 4 Additional Dry Weather Illicit Discharge Detection & Elimination (IDDE) Outfall Screening Results - MS4 General Permit Assistance for the DPW Engineering Division

This memorandum documents dry weather screenings completed under the Agreement for Professional Engineering Services – Municipal Separate Storm Sewer Systems (MS4) General Permit Assistance for the Department of Public Works (DPW) Engineering Division of the Town of Stoughton.

Under this contract, Environmental Partners Group, LLC (EP) updated GIS mapping data and the MS4 outfall inventory. **The current MS4 outfall inventory includes 147 outfalls**. As part of this effort, nine (9) new outfalls were inventoried and screened in March, April, and July 2022. Four (4) outfalls were found to be flowing during dry weather and sampled. In total, 47 outfalls were removed from the inventory and 11 outfalls were added.

Outfall Inventory Updates

Prior to these updates, the Town's MS4 outfall inventory included 183 outfalls. That inventory had been improved last year in 2021 after field staff visited all outfall and recorded notes on ownership. This year, Environmental Partners continued that work and conducted an in-depth review of roadway and subdivision ownership to refine the outfall inventory further. A number of roads (listed below) are privately maintained and previously had an outfall that now is confirmed to be private. This list was verified by the Town's asset management "Roadway Acceptance Review" list, last updated February 2022, and during discussions with the Town's GIS Manager. The private roads include:

- Erin Road
- Ethyl Way
- Greenbrook Drive
- Ikea Way
- Jennifer Lane
- Jessica Drive
- Patricia Drive
- Onset Lane
- Reebok Drive
- Sunrise Terrace

Additionally, Environmental Partners confirmed five (5) outfalls to be owned and maintained by the Massachusetts Department of Transportation (MassDOT). MassDOT published stormwater GIS mapping for public use in March 2021, data that was unavailable or in draft form when the original outfall inventory was developed. Environmental Partners cross-referenced this inventory with the Town's outfall inventory as well as road ownership GIS to determine five (5) outfalls—located on Park Street and Route 139—should be removed from the municipal IDDE Program.

Other separate stormwater mapping improvements resulted in adjustments to the outfall inventory as well. Several new BMPs were inventoried this year, and all structures discharging into these BMPs now are considered outlets. The overflow structures that discharge stormwater from the BMPs to waterbodies were added as new MS4 outfalls. Additionally, newly mapped drainage ditches added two previously flagged upland outfalls (OF-793, OF-809) to the MS4 outfall inventory. These two outfalls drain a significant portion of the center of Town, including over 9.5 miles of drain pipe and over 10 municipal facilities.

Lastly, updates to the inventory were also made based on field observations during catchment investigation work. For example, field connectivity updates indicated that two structures were actually culvert outlets, which was verified with as-built site plans and Town input (OF-143 and OF-365).

Outfall Sampling Results

The four (4) outfalls found to be flowing during dry weather were analyzed for ammonia, chlorine, fecal coliform, E. coli, total phosphorous, and surfactants at a state certified laboratory, Alpha Analytical Inc. in Westborough, MA. Outfalls were field-screened for temperature, specific conductance, salinity, pH, and dissolved oxygen. A summary of the field and analytical results is presented in Table 2: Stormwater Field Screening and Analytical Results.

Sampling results from two (2) outfalls showed parameter concentrations above MS4 thresholds. At outfall OF-545 on Wheeler Circle, ammonia was detected at 1.92 mg/L, which exceeds the contaminant criteria of 0.5 mg/L. Specific conductance was detected at 2,104 µS/cm, which exceeds the contaminant criteria of 2,000 µS/cm. Additionally, at outfall OF-793 on Myrtle Street, fecal coliform and E. coli were detected at 1,553.12 col/100 mL and 1,986.29 MPN/100 mL, respectively. Fecal coliform does not have an applicable threshold, but E. coli has a threshold of 236 MPN/100 mL, which is lower than the sampling results at OF-793. These two outfalls should be prioritized for future catchment investigations.

Attachments

Table 1: Changes to Town of Stoughton MS4 Outfall Inventory

Table 2: Stormwater Field Screening and Analytical Results

Laboratory Analytical Report

MS4 Certification Page

Table 1: Changes to the Town of Stoughton MS4 Outfall Inventory

Outfall ID	Reason for Change	Add or Remove	Screening Status, if applicable	Screening Date, if applicable
OF-100	Outlet to BMP (not waterway)	Remove		
OF-136	Private	Remove		
OF-15	Private	Remove		
OF-236	Outlet to BMP (not waterway)	Remove		
OF-250	Outlet to BMP (not waterway)	Remove		
OF-303	Private	Remove		
OF-305	Private	Remove		
OF-327	Private	Remove		
OF-346	Private	Remove		
OF-365	Culvert outlet	Remove		
OF-395	Private	Remove		
OF-419	Outfall from BMP to waterway	Add	Dry	3/9/2022
OF-429	Outlet to BMP (not waterway)	Remove		
OF-46	Outlet to BMP (not waterway)	Remove		
OF-486	Private	Remove		
OF-494	Private	Remove		
OF-5	Private	Remove		
OF-50	Private	Remove		
OF-51	Private	Remove		
OF-52	Private	Remove		
OF-521	Private	Remove		
OF-522	Private	Remove		
OF-526	Private	Remove		
OF-535	Private	Remove		
OF-545	Not private	Add	Flowing, Sampled	4/13/2022
OF-546	Private	Remove		
OF-567	Private	Remove		
OF-578	Private	Remove		
OF-585	Private	Remove		
OF-586	Private	Remove		
OF-6	Private	Remove		
OF-617	Private	Remove		
OF-629	Private	Remove		
OF-697	Private	Remove		
OF-699	Private	Remove		
OF-7	Private	Remove		
OF-700	Private	Remove		

Table 1: Changes to the Town of Stoughton MS4 Outfall Inventory

Outfall ID	Reason for Change	Add or Remove	Screening Status, if applicable	Screening Date, if applicable
OF-703	Private	Remove		
OF-704	Private	Remove		
OF-728	Previously was greater than 100 feet from Waters of the U.S., but location was improved and now is within 100 feet of water	Add	Flowing, Sampled	4/13/2022
OF-732	Private	Remove		
OF-733	Private	Remove		
OF-765	Private	Remove		
OF-790	Private	Remove		
OF-791	Private	Remove		
OF-793	280 feet from Waters of the U.S., but newly mapped drainage ditch conveys water from outfall to waterbody	Add	Flowing, Sampled	7/1/2022
OF-800	Private	Remove		
OF-803	Inventoried, new ID, outfall from BMP	Add	Dry	3/14/2022
OF-804	Inventoried, new ID, outfall from BMP	Add	Dry	3/14/2022
OF-805	Inventoried, new ID, outfall from BMP	Add	Dry	3/14/2022
OF-806	Inventoried, new ID, outfall from BMP	Add	Flowing, Sampled	4/13/2022
OF-807	Inventoried, new ID, outfall from BMP	Add	Dry	3/9/2022
OF-809	Located greater than 100 feet from Waters of the U.S., but newly mapped drainage ditch conveys water from outfall to waterbody	Add	Dry	3/9/2022
OF-810	Identified during catchment investigations	Add	Dry	3/22/2022
OF-86	Outlet to BMP (not waterway)	Remove		
OF-87	Private	Remove		
OF-99	Outlet to BMP (not waterway)	Remove		
OF-143	Structure determined to be culvert outfall and receive no Town drainage	Remove		

Table 2: Stormwater Field Screening and Analytical Results

Outfall Identification		OF-545		OF-728		OF-806		OF-793
Discharge Waterbody		Unnamed Tributary to Steep Hill Brook		Unnamed Tributary to Steep Hill Brook		Unnamed Tributary to Beaver Brook		Unnamed Tributary to Steep Hill Brook
Address		153 Wheeler Circle		Memorial/Simpson		57 Tamarack Drive		70 Myrtle Street
Date Sampled		4/13/2022	6/29/2022	4/13/2022	6/29/2022	4/13/2022	6/29/2022	7/1/2022
Sample Time		9:55 AM	10:05 AM	10:35 AM	10:20 AM	11:35 AM	1:05 PM	11:15 AM
Field Test Results	Threshold							
Temperature (˚C)		-	18.2	-	18.6	-	24.5	18.5
Specific Conductance (µS/cm)	2000	-	**2104**	-	794	-	649	1273
Salinity (ppt)		-	1.08	-	0.39	-	0.08	0.64
DO (mg/L)		-	5.09	-	7.8	-	4.76	6.9
pH (unitless)	6.5-8.0	-	7.01	-	7.44	-	7.31	7.42
Oxygen Reduction Potential (mV)		-	-100	-	-1.9	-	-140	-84
Analytical Results								
Ammonia as Nitrogen (mg/L)	0.5	**1.92**	-	0.165	-	ND	-	0.12
Total Residual Chlorine (mg/L)		ND	-	ND	-	ND	-	ND
Phosphorus, Total (mg/L)		0.16	-	0.017	-	0.046	-	0.02
Surfactants, MBAS (mg/L)	0.25	ND	-	ND	-	ND	-	ND
Fecal Coliform, MF (col/100mL)		70	-	15	-	ND	-	**1553.12**
E. coli (MPN/100 mL)	236	36.41	-	16.94	-	1	-	**1986.29**

Notes
- : Not Tested
ND: Non-detect
Bold, red values exceed contaminant criteria.

ANALYTICAL REPORT

Lab Number:	L2235345
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Annie Tucker
Phone:	(617) 657-0973
Project Name:	Not Specified
Project Number:	295.2010
Report Date:	07/25/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: Not Specified
Project Number: 295.2010

Lab Number: L2235345
Report Date: 07/25/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2235345-01	OF-793	WATER	Not Specified	07/01/22 11:15	07/01/22

Project Name:	Not Specified	**Lab Number:**	L2235345
Project Number:	295.2010	**Report Date:**	07/25/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	Not Specified	**Lab Number:**	L2235345
Project Number:	295.2010	**Report Date:**	07/25/22

Case Narrative (continued)

Chlorine, Total Residual

WG1658256: A Matrix Spike could not be performed due to insufficient sample volume available for analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 07/25/22

INORGANICS
&
MISCELLANEOUS

Project Name: Not Specified
Project Number: 295.2010

Lab Number: L2235345
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2235345-01
Client ID: OF-793
Sample Location: Not Specified

Date Collected: 07/01/22 11:15
Date Received: 07/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Fecal (MPN)	1553.12		MPN/100ml	1	NA	1	-	07/01/22 14:32	121,9223B	TL
E. Coli (MPN)	1986.29		MPN/100ml	1	NA	1	-	07/01/22 15:06	121,9223B	JW
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/02/22 08:05	121,4500CL-D	MR
Nitrogen, Ammonia	0.120		mg/l	0.075	--	1	07/19/22 23:15	07/20/22 17:53	121,4500NH3-BH	AT
Nitrogen, Nitrate/Nitrite	2.2		mg/l	0.10	--	1	-	07/06/22 05:32	44,353.2	MR
Total Nitrogen	2.7		mg/l	0.30	--	1	-	07/25/22 18:08	107,-	JO
Nitrogen, Total Kjeldahl	0.536		mg/l	0.300	--	1	07/25/22 08:30	07/25/22 16:23	121,4500NH3-H	AT
Phosphorus, Total	0.020		mg/l	0.010	--	1	07/14/22 12:00	07/15/22 09:09	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/02/22 07:30	07/02/22 09:18	121,5540C	KA

Project Name:

Project Number: 295.2010

Lab Number: L2235345

Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab for sample(s): 01 Batch: WG1658117-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	07/01/22 15:06	121,9223B	JW
Microbiological Analysis - Westborough Lab for sample(s): 01 Batch: WG1658118-1										
Coliform, Fecal (MPN)	<1		MPN/100ml	1	NA	1	-	07/01/22 14:32	121,9223B	TL
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1658254-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/02/22 07:30	07/02/22 09:14	121,5540C	KA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1658256-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/02/22 08:05	121,4500CL-D	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1658678-1										
Nitrogen, Nitrate/Nitrite	ND		mg/l	0.10	--	1	-	07/06/22 03:23	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1662901-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	07/14/22 12:00	07/15/22 08:46	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1664910-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/19/22 23:15	07/20/22 17:37	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1666801-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	--	1	07/25/22 08:30	07/25/22 16:18	121,4500NH3-H	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 295.2010

Lab Number: L2235345

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1658254-2								
Surfactants, MBAS	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1658256-2								
Chlorine, Total Residual	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1658678-2								
Nitrogen, Nitrate/Nitrite	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1662901-2								
Phosphorus, Total	96		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1664910-2								
Nitrogen, Ammonia	112		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1666801-2								
Nitrogen, Total Kjeldahl	98		-		78-122	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 295.2010

Lab Number: L2235345
Report Date: 07/25/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1658254-4 QC Sample: L2235307-02 Client ID: MS Sample												
Surfactants, MBAS	ND	0.4	0.450	112		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1658678-4 QC Sample: L2235345-01 Client ID: OF-793												
Nitrogen, Nitrate/Nitrite	2.2	4	6.6	110		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1662901-3 QC Sample: L2233668-01 Client ID: MS Sample												
Phosphorus, Total	0.045	0.5	0.546	100		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1664910-4 QC Sample: L2234291-01 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.59	90		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1666801-4 QC Sample: L2235295-02 Client ID: MS Sample												
Nitrogen, Total Kjeldahl	ND	16	15.0	94		-	-		77-111	-		24

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 295.2010

Lab Number: L2235345
Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1658254-3 QC Sample: L2235307-02 Client ID: DUP Sample						
Surfactants, MBAS	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1658256-3 QC Sample: L2235345-01 Client ID: OF-793						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1658678-3 QC Sample: L2235345-01 Client ID: OF-793						
Nitrogen, Nitrate/Nitrite	2.2	2.3	mg/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1662901-4 QC Sample: L2233668-01 Client ID: DUP Sample						
Phosphorus, Total	0.045	0.046	mg/l	2		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1664910-3 QC Sample: L2234291-01 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1666801-3 QC Sample: L2235295-02 Client ID: DUP Sample						
Nitrogen, Total Kjeldahl	ND	ND	mg/l	NC		24

Project Name: Not Specified
Project Number: 295.2010

Lab Number: L2235345
Report Date: 07/25/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2235345-01A	Plastic 120ml unpreserved	A	7	7	5.1	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2235345-01B	Bacteria Cup Na2S2O3 preserved	A	NA		5.1	Y	Absent		F-COLI-QT(.33)
L2235345-01C	Bacteria Cup Na2S2O3 preserved	A	NA		5.1	Y	Absent		F-COLI-QT(.33)
L2235345-01D	Bacteria Cup Na2S2O3 preserved	A	NA		5.1	Y	Absent		E-COLI-QT(.33)
L2235345-01E	Bacteria Cup Na2S2O3 preserved	A	NA		5.1	Y	Absent		E-COLI-QT(.33)
L2235345-01F	Plastic 250ml H2SO4 preserved	A	<2	<2	5.1	Y	Absent		TKN-4500(28),NO3/NO2-353(28),TPHOS-4500(28),TNITROGEN(28),NH3-4500(28)
L2235345-01G	Plastic 500ml H2SO4 preserved	A	<2	<2	5.1	Y	Absent		TKN-4500(28),NO3/NO2-353(28),TPHOS-4500(28),TNITROGEN(28),NH3-4500(28)
L2235345-01H	Plastic 950ml unpreserved	A	7	7	5.1	Y	Absent		TRC-4500(1),MBAS-5540(2)

*Values in parentheses indicate holding time in days

Project Name:	Not Specified	**Lab Number:**	L2235345
Project Number:	295.2010	**Report Date:**	07/25/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	Not Specified	**Lab Number:**	L2235345
Project Number:	295.2010	**Report Date:**	07/25/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

Report Format: Data Usability Report

Project Name:	Not Specified	**Lab Number:**	L2235345
Project Number:	295.2010	**Report Date:**	07/25/22

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name:	Not Specified	**Lab Number:**	L2235345
Project Number:	295.2010	**Report Date:**	07/25/22

REFERENCES

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193

Date Rec'd in Lab: 7/1/22

ALPHA Job #: L2235345

Client Information

Client: Environmental Partners
Address: 1900 Crown Colony Dr 402
Quincy MA
Phone: 207 939 3583
Fax:
Email: aet@envpartners.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name:
Project Location:
Project #:
Project Manager:
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: R282-2109.02

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

☐ Yes ☑ No Are MCP Analytical Methods Required?
☐ Yes ☑ No Are Drinking Water Samples Submitted?
☐ Yes ☑ No Have you met minimum field QC requirements?

Other Project Specific Requirements/Comments/Detection Limits:

NPDES / MS4

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	E coli	Fecal coliform	Surfactants	TRC	Total Phos.	Ammonia	Total N. Nitrogen	TOTAL # BOTTLES	Sample Specific Comments
35345-01	OF-793	7/1/22	11:15	Storm water	AT	X	X	X	X	X	X	X		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☑ Lab to do
Preservation
☐ Lab to do
(Please specify below)

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ? NO

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/1/22 11:44	MaM AT	7/1/22 1147
MaM	7/1/22 1238	[signature]	7/1/22 1238

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

ANALYTICAL REPORT

Lab Number:	L2219185
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Annie Tucker
Phone:	(617) 657-0973
Project Name:	STOUGHTON FY22 OUTFALLS
Project Number:	295.2010
Report Date:	04/27/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: STOUGHTON FY22 OUTFALLS
Project Number: 295.2010

Lab Number: L2219185
Report Date: 04/27/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2219185-01	OF-545	WATER	STOUGHTON, MA	04/13/22 09:55	04/13/22
L2219185-02	OF-728	WATER	STOUGHTON, MA	04/13/22 10:35	04/13/22
L2219185-03	OF-806	WATER	STOUGHTON, MA	04/13/22 11:35	04/13/22

Project Name:	STOUGHTON FY22 OUTFALLS	**Lab Number:**	L2219185
Project Number:	295.2010	**Report Date:**	04/27/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	STOUGHTON FY22 OUTFALLS	**Lab Number:**	L2219185
Project Number:	295.2010	**Report Date:**	04/27/22

Case Narrative (continued)

Surfactants, MBAS

L2219185-01: The sample has an elevated detection limit due to the dilution required by the sample matrix.

Coliform, Fecal (MF)

L2219185-03: The sample has an elevated detection limit due to the dilution required by the method.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 04/27/22

INORGANICS
&
MISCELLANEOUS

Project Name: STOUGHTON FY22 OUTFALLS
Project Number: 295.2010
Lab Number: L2219185
Report Date: 04/27/22

SAMPLE RESULTS

Lab ID: L2219185-01
Client ID: OF-545
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 04/13/22 09:55
Date Received: 04/13/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Fecal (MF)	70		col/100ml	2.0	NA	2	-	04/13/22 16:59	121,9222D	JW
E. Coli (MPN)	36.41		MPN/100ml	1	NA	1	-	04/13/22 15:30	121,9223B	TL
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/13/22 23:44	121,4500CL-D	AS
Nitrogen, Ammonia	1.92		mg/l	0.075	--	1	04/15/22 13:00	04/15/22 21:51	121,4500NH3-BH	AT
Phosphorus, Total	0.160		mg/l	0.010	--	1	04/20/22 10:30	04/20/22 15:21	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.500	--	10	04/14/22 01:30	04/14/22 04:04	121,5540C	KA

Project Name: STOUGHTON FY22 OUTFALLS
Project Number: 295.2010
Lab Number: L2219185
Report Date: 04/27/22

SAMPLE RESULTS

Lab ID: L2219185-02
Client ID: OF-728
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 04/13/22 10:35
Date Received: 04/13/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Fecal (MF)	15		col/100ml	2.0	NA	2	-	04/13/22 16:59	121,9222D	JW
E. Coli (MPN)	16.94		MPN/100ml	1	NA	1	-	04/13/22 15:30	121,9223B	TL
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/13/22 23:44	121,4500CL-D	AS
Nitrogen, Ammonia	0.165		mg/l	0.075	--	1	04/15/22 13:00	04/15/22 21:52	121,4500NH3-BH	AT
Phosphorus, Total	0.017		mg/l	0.010	--	1	04/20/22 10:30	04/20/22 15:22	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	04/14/22 01:30	04/14/22 04:05	121,5540C	KA

Project Name: STOUGHTON FY22 OUTFALLS
Project Number: 295.2010
Lab Number: L2219185
Report Date: 04/27/22

SAMPLE RESULTS

Lab ID: L2219185-03
Client ID: OF-806
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 04/13/22 11:35
Date Received: 04/13/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Fecal (MF)	ND		col/100ml	2.0	NA	2	-	04/13/22 16:59	121,9222D	JW
E. Coli (MPN)	1		MPN/100ml	1	NA	1	-	04/13/22 15:30	121,9223B	TL
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/13/22 23:44	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/16/22 03:14	04/18/22 13:15	121,4500NH3-BH	KP
Phosphorus, Total	0.046		mg/l	0.010	--	1	04/20/22 10:30	04/20/22 15:23	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	04/14/22 01:30	04/14/22 04:05	121,5540C	KA

Project Name: STOUGHTON FY22 OUTFALLS **Lab Number:** L2219185

Project Number: 295.2010 **Report Date:** 04/27/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab for sample(s): 01-03 Batch: WG1626867-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	04/13/22 15:30	121,9223B	TL
Microbiological Analysis - Westborough Lab for sample(s): 01-03 Batch: WG1626935-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	04/13/22 16:59	121,9222D	JW
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1626963-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/13/22 23:44	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1626997-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	04/14/22 01:30	04/14/22 04:02	121,5540C	KA
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1627569-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/15/22 13:00	04/15/22 21:37	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1627887-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/16/22 03:14	04/18/22 12:57	121,4500NH3-BH	KP
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1629047-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	04/20/22 10:30	04/20/22 14:54	121,4500P-E	SD

Lab Control Sample Analysis

Batch Quality Control

Project Name: STOUGHTON FY22 OUTFALLS

Project Number: 295.2010

Lab Number: L2219185

Report Date: 04/27/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1626963-2								
Chlorine, Total Residual	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1626997-2								
Surfactants, MBAS	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1627569-2								
Nitrogen, Ammonia	105		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1627887-2								
Nitrogen, Ammonia	98		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1629047-2								
Phosphorus, Total	97		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: STOUGHTON FY22 OUTFALLS
Project Number: 295.2010

Lab Number: L2219185
Report Date: 04/27/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1626963-4 QC Sample: L2219146-02 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.27	108		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1626997-4 QC Sample: L2219187-01 Client ID: MS Sample												
Surfactants, MBAS	ND	0.4	0.430	108		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1627569-4 QC Sample: L2217853-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.199	4	3.79	90		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1627887-4 QC Sample: L2217954-01 Client ID: MS Sample												
Nitrogen, Ammonia	4.62	4	8.58	99		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1629047-3 QC Sample: L2219111-01 Client ID: MS Sample												
Phosphorus, Total	42.5	12.5	57.3	118		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: STOUGHTON FY22 OUTFALLS

Project Number: 295.2010

Lab Number: L2219185

Report Date: 04/27/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1626963-3 QC Sample: L2219146-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1626997-3 QC Sample: L2219187-01 Client ID: DUP Sample						
Surfactants, MBAS	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1627569-3 QC Sample: L2217853-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.199	0.265	mg/l	**28**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1627887-3 QC Sample: L2217954-01 Client ID: DUP Sample						
Nitrogen, Ammonia	4.62	4.78	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1629047-4 QC Sample: L2219111-01 Client ID: DUP Sample						
Phosphorus, Total	42.5	42.3	mg/l	0		20

Project Name: STOUGHTON FY22 OUTFALLS
Project Number: 295.2010

Lab Number: L2219185
Report Date: 04/27/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2219185-01A	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		E-COLI-QT(.33)
L2219185-01B	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		E-COLI-QT(.33)
L2219185-01C	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		F-COLI-MF(.33)
L2219185-01D	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		F-COLI-MF(.33)
L2219185-01E	Plastic 120ml unpreserved	A	7	7	4.6	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2219185-01F	Plastic 500ml H2SO4 preserved	A	<2	<2	4.6	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2219185-01G	Plastic 950ml unpreserved	A	7	7	4.6	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2219185-02A	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		E-COLI-QT(.33)
L2219185-02B	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		E-COLI-QT(.33)
L2219185-02C	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		F-COLI-MF(.33)
L2219185-02D	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		F-COLI-MF(.33)
L2219185-02E	Plastic 120ml unpreserved	A	7	7	4.6	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2219185-02F	Plastic 500ml H2SO4 preserved	A	<2	<2	4.6	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2219185-02G	Plastic 950ml unpreserved	A	7	7	4.6	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2219185-03A	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		E-COLI-QT(.33)
L2219185-03B	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		E-COLI-QT(.33)
L2219185-03C	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		F-COLI-MF(.33)
L2219185-03D	Bacteria Cup Na2S2O3 preserved	A	NA		4.6	Y	Absent		F-COLI-MF(.33)
L2219185-03E	Plastic 120ml unpreserved	A	7	7	4.6	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2219185-03F	Plastic 500ml H2SO4 preserved	A	<2	<2	4.6	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2219185-03G	Plastic 950ml unpreserved	A	7	7	4.6	Y	Absent		TRC-4500(1),MBAS-5540(2)

*Values in parentheses indicate holding time in days

Project Name:	STOUGHTON FY22 OUTFALLS	**Lab Number:**	L2219185
Project Number:	295.2010	**Report Date:**	04/27/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	STOUGHTON FY22 OUTFALLS	**Lab Number:**	L2219185
Project Number:	295.2010	**Report Date:**	04/27/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report

Project Name:	STOUGHTON FY22 OUTFALLS	**Lab Number:**	L2219185
Project Number:	295.2010	**Report Date:**	04/27/22

Data Qualifiers

the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: STOUGHTON FY22 OUTFALLS **Lab Number:** L2219185

Project Number: 295.2010 **Report Date:** 04/27/22

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 4/13/22

ALPHA Job #: L2219185

ALPHA ANALYTICAL

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Project Information

Project Name: Stoughton FY22 Outfalls

Project Location: Stoughton, MA

Project #:

Project Manager:

ALPHA Quote #:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Client Information

Client: Environmental Partners

Address: 1900 Crown Colony Dr #402 Quincy MA

Phone: 207 939 3883

Email: aet@envpartners.com

Regulatory Requirements & Project Information Requirements

- ☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
- ☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
- ☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
- ☒ Yes ☐ No NPDES RGP
- ☐ Other State /Fed Program ______ Criteria ______

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

MS4

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO: Filtration ☐ Field ☒ Lab to do; Preservation ☒ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	E. Coli + Fecal Coliform	Surfactants	TRC	Ammonia	Total Phosphorus	Sample Comments	Total # Bottles
19185-01	OF-545	4/13/22	9:55	Storm water	AET	X	X	X	X	X		
-02	OF-728	↓	10:35	↓	↓	X	X	X	X	X		
-03	OF-806	↓	11:35	↓	↓	X	X	X	X	X		

Container Type

Preservative

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Annie [signature]	4/13/22 12:55	[signature] AAL	4/13/22 12:55
[signature] AAL	4/13/22 14:15	C [signature] AAL	4/13/22 1415

FORM NO: 01-01 (rev. 12-Mar-2012)

Certification

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Printed Name

Signature _____ Date

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: July 21, 2023

To Marc Tisdelle P.E.- Town Engineer

From Scott Turner P.E. – Director of Planning, Environmental Partners

CC Laurence Langlois – GIS Manager and Stormwater Coordinator, Town of Stoughton

Paul Giffune – DPW Superintendent, Town of Stoughton

Karen Chan – Project Scientist, Environmental Partners

Subject: Illicit Discharge Detection & Elimination (IDDE) Year 5 Catchment Investigations Findings and Recommendations

This memorandum summarizes the Illicit Discharge Detection & Elimination (IDDE) catchment investigations, outlined in Task 2c of the contract for Professional Engineering Services for the Municipal Separate Storm Sewer System (MS4) General Permit between the Town of Stoughton and Environmental Partners Group LLC (EP), signed May 5, 2022. In accordance with the 2016 Massachusetts MS4 General Permit, the Town of Stoughton must perform catchment investigations at each of the Town's 147 catchments by the end of the Permit term (i.e., Year 10).

During dry weather conditions, EP visited 92 catchments between March 21, 2023, and April 27, 2023. Catchment investigations at 72 catchments were fully completed, initial field investigations were completed at 10 catchments and require additional Town follow up, and catchment investigation at 11 catchments are incomplete and require Town assistance to complete the field work.

Additionally, 15 new outfalls were identified in the field and added to the outfall inventory and 11 outfalls were removed from the inventory. Outfalls removed from the inventory were either identified as being private, part of a different Town's collection system, or re-classified as a culverted stream. As such, with the new outfall count has been updated to **152 outfalls**.

The investigated catchments were based on the Town's outfall-catchment ranking table. EP targeted outfall-catchments that were ranked as "high priority" based on outfall screenings conducted in June 2019 for investigation. The locations of the investigated catchments are listed in **Table 1: Catchment Investigation Locations** and in **Figure 1: Catchment Investigation Progress**. Catchment packages for each catchment investigated are attached to this report and contain field forms summarizing the work and findings.

During these catchment investigations, EP followed the catchment investigation methodology detailed in the MS4 General Permit. This methodology can be summarized as follows:

- EP verified stormwater mapping,
- EP identified the key junction manholes (KJMs) for each catchment and inspected them during dry weather, starting at the most downstream location,
- At each KJM, EP completed a field form noting the structure's condition, presence and source of any flow, and the invert, diameter, and material of the structure and all inlet and outlet pipes. In addition, pictures were taken of the inside and outside of the structure. The KJM field forms are attached to this memorandum,
- If flow was found in a KJM, EP used field test kits to screen for ammonia, total chlorine, and surfactants,
- If field sampling results or visual and olfactory inspection indicated potential illicit discharges, the upstream area was flagged for further investigation,
- EP continued inspecting and, if flowing, sampling all KJMs until the whole catchment was evaluated,
- Refined catchment delineations were developed in the office after field work was complete,
- EP worked with the Town to identify system vulnerability factors (SVFs) within each catchment, and
- If no evidence of illicit connections were found, the catchment investigation is considered complete.

Manhole/Catch Basin Sampling Results

A summary of the field sampling results is presented in **Table 2**. Environmental Partners sampled a total of 24 structures for field analysis. Flow was encountered at 19 outfall catchments, which include:

- OF-105 (54-62 Campanelli Parkway)
- OF-109 (1-99; 2-98 O' Hare Circle)
- OF-192 (63 York Street)
- OF-207 (16 Overlook Road)
- OF-322 (7 McNamara Street)
- OF-350 (24 Dino Drive)
- OF-378 (12 Highland Rock Drive)
- OF-380-(97 Holland Avenue)
- OF-399 (2399 Bay Road)
- OF-453 (128 Swanson Terrace)
- OF-458 (10 Flynn Road)
- OF-459 (4 Fraser Road)
- OF-54 (171 Atkinson Avenue)
- OF-55 (69 Atkinson Avenue)
- OF-60 (30 Jeffrey Way)
- OF-792 (G2 Central Drive)
- OF-803 (150 Eagle Rock Road)
- OF-807 (14 Chase Run)
- OF-809- (1151 Turnpike Street)

Out of the 24 sampled structures, 19 structures showed detectable total chlorine. Surfactants, also known as detergents, were present in concentrations between 0.25 and 0.50 mg/L in all structures sampled. Lastly, detectable ammonia was only found in one structure. In accordance with the MS4 Permit, these field test results alone do not indicate the presence of an illicit discharge. A summary of the sampling kit results is presented in **Table 2: Stormwater Field Test Kit Analysis Results.**

Catchment Investigation Findings

During field investigations, some structures were identified as needing maintenance or replacement, and additional Town follow-up. Maintenance/replacement needs, and additional Town follow-up are summarized below.

Required Town Follow-up for Incomplete Catchments

- Outfall -catchment OF-151 (202 Morton Street)
    - The structures are in a high trafficked area. Police detail or Town assistance to direct traffic is needed.
- Outfall-catchment OF-195 (Intersection of Meadowbrook Lane and York Street)
    - Could not locate any structures upstream of SWMH-1492. Town to confirm connectivity and if line is still active.
        - Additionally, a private outfall was identified and flowing behind 94 York Drive. Town to further investigate and confirm that the discharge from the outfall is not an illicit discharge by the end of the permit term (2028).
- Outfall-catchment OF-211 (524 Highland Street)
    - Could not locate SWMH-605 or SWMH-606. Town to confirm location of manholes.
        - During field investigations, the manholes appeared to be buried in the grass.
- Outfall-catchment OF-217 (42 Ash Park Drive)
    - Could not open SWMH-760. When opening the structure, both the frame and cover were coming off together. Town to assist with opening the structure. Replacement of the fareme and cover is recommended.
        - The catchment was listed as “incomplete” during the Year 4 investigations as SWMH-760 could not be opened. The catchment was attempted again in Year 5, but the manhole was still inaccessible.
- Outfall-catchment OF-350 (24 Dino Drive)
    - Revisited and re-sampled catchment at SWMH-12. During the Year 4 catchment investigations, the catchment was flowing and had a high detectable total chlorine reading (3.4 mg/L). In Year 5, the catchment was re-sampled, and the catchment showed a detectable total chlorine reading but not as high as Year 4 (0.07 mg/L).
        - The upstream manhole, SWMH-11, was dry, indicating that flow is entering system between the two manholes. The catchment should be sampled yearly to further verify the presence of total chlorine or an illicit discharge. High total chlorine readings suggest there may be an intermittent illicit discharge entering this catchment or the stream upstream, the catchment.
        - Town to assist in determining the source of flow. Closed circuit television (CCTV) or dye testing the structure or line is suggested.

Outfall-catchment OF-458 (10 Flynn Road)

- Revisited and re-sampled catchment at SWMH-1721. During the Year 4 catchment investigations, the catchment was flowing and had a high surfactants reading (3.0 mg/L). In Year 5, the catchment was re-sampled, and the catchment showed detectable surfactants reading but not as high as Year 4 (0.25 mg/L).

        - The catchment should be sampled yearly to further verify the presence of surfactants or an illicit discharge. High surfactants readings suggest there may be an intermittent illicit discharge entering this catchment or the stream upstream, the catchment.
        - Town to assist in determining the source of flow. If an illicit discharge is found, the connection should be removed. Closed circuit television (CCTV) of the structure or line is suggested.
- Outfall-catchment OF-459 (4 Fraser Road)
    - Revisited and re-sampled catchment at SWMH-1718. During the Year 4 catchment investigations, the catchment was flowing and had a high surfactants reading (between 0.5 mg/L-2.0 mg/L). In Year 5, the catchment was re-sampled, and the catchment showed similar surfactants readings as Year 4 (2.0 mg/L).
        - The catchment should be sampled yearly to further verify the presence of surfactants or an illicit discharge. High surfactants readings suggest there may be an intermittent illicit discharge entering this catchment or the stream upstream, the catchment.
        - Town to assist in determining the source of flow. Closed circuit television (CCTV) of the structure or line is suggested.
- Outfall-catchment OF-553O-1 (1782 West Street)
    - A new outlet was found on West Street. The outlet looked relatively new but dry. Field crew could not locate any upstream structures or an inlet connecting to outlet. The outlet is located within 100 feet of a waterbody.
        - Furter investigation is needed to determine if the outlet is an abandoned culverted stream or if there are any upstream structures. If upstream structures do exist, they are likely buried.
- Outfall-catchment OF-669 (951 Pleasant Street)
    - Additional Town access to the Little Theater of Stoughton parking lot is needed to investigate the upstream structure.
- Outfall-catchment OF-807 (14 Chase Run)
    - Grease and floatables were found in and on the grate of catch basin SWIN-677. Due to the amount of grease, floatables and turbidity, pH, temperature, specific conductivity, and total chlorine could not be measured.
        - An ammonia reading of 6.0 gm/L and an estimated surfactants reading of 0.25 mg/L were found. These readings suggest a possible illicit discharge. Town to further determine the source of the grease and floatables. Additionally, cleaning of the structure is required.
        - Grease and floatables were not found in the downstream manhole, SWMH-34, or outlet OF-727.

Suggested Town Follow-up for Catchments with Initial Catchment Field Work Complete

- Outfall-catchment OF-55 (107 Atkinson Avenue)
    - Additional Town assistance is needed to confirm connectivity, specifically at the intersection of Chase Run and Summer Street. Between manholes SWMH-33 and SWMH-107, the flow direction appeared to change but could not be confirmed.
- Outfall-catchment OF-65 (1810 Central Street)
    - Additional Town assistance is needed to confirm connectivity between structures SWIN-1923 and SWMH-1235. In GIS, there is an outgoing line leaving SWIN-1923 and an incoming line entering SWMH-1235, however, the two lines were not found in the field.
- Outfall-catchment OF-322 (166 Kotilk Street)
    - Additional Town assistance is needed to open stormwater on McNamara Street and Poskus Street (SWMH-281, SWMH-282, SWMH-322 and SWMH-633). The manhole covers and frames were rusted over, thus not allowing the field crew to open the structures.
- Outfall-catchment OF-380 (20 Smyth Street)
    - Additional Town assistance is needed to locate manholes SWMH-294, SWMH-38, SWMH-670, SWIN-1018, and SWIN-927.
    - Additional Town assistance is needed to confirm connectivity within SWMH-292 (incoming line in the direction of 68 Holland Avenue) and SWMH-348 (incoming line in the direction of 27 Smyth Street). In both structures, an incoming line was found but an upstream structure was not found. The assets may either not exist or may be buried.
- Outfall-catchment OF-478 (215 Woodpecker Road)
    - Additional Town assistance is needed to locate catch basins, SWIN-1850 and SWIN-1851.
- Outfall-catchment OF-516 (3 Sumner Street)
    - Additional Town assistance is needed to open manholes SWMH-450, and SWMH-425.
- Outfall-catchment OF-616 (1023 Turnpike Street)
    - Additional Town assistance is needed to confirm connectivity within structure SWMH-2041. In GIS, there is an incoming line entering SWMH-2041, however, the line was not found in the field.
- Outfall-catchment OF-694 (951 Pleasant Street)
    - Additional Town assistance is needed to confirm connectivity of the system on Maple Street. Manhole, SWMH-2272 and catch basin SWIN-3250 were found to connect to Town drainage. Though the structures were found to connect to Town drainage, an outlet structure connected to these structures could not be located.
    - Additionally, EP believes that this outfall is part of a larger system.
- Outfall-catchment OF-739 (104 Page Street)
    - Additional Town assistance is needed to confirm connectivity to manhole SWMH-2009. The drain manholes and catch basins connecting to the incoming line down Page Street towards Route 24 could not be found. Additionally, the incoming line across 104 Page Street could not be located and is assumed to not exist.

Outfall-catchment OF-748 (2070 Central Street)

  - Additional Town assistance is needed to confirm connectivity to catch basin SWIN-1790. A drain line in the direction of 2110 Central Street from SWIN-1790 drains to an unmapped asset. A bell system manhole is in front of 2110 Central Street and a stormwater manhole could not be located.
    - In addition to confirming connectivity, Town is to further confirm if a stormwater manhole exists and to locate where SWIN-1790 discharges to.
- Outfall-catchment OF-769 (1154 Bay Road)
  - Possible interconnection found in manhole SWMH-2312 with Town of Sharon. Additional Town assistance is needed to confirm connectivity.
  - Additional Town assistance is needed to locate catch basins, SWIN-103, SWIN-168, SWIN-296, and SWIN-297 and manholes, SWMH-243 and SWMH-674.

Maintenance Items Noted

- Outfall-catchment OF-109 (81 D Street)
  - Originally marked "Incomplete" during the Year 4 investigations. Manhole, SWMH-2032 was located but could not be opened due to the amount of vegetation on the manhole. To allow future access to the structure, removal of vegetation on the manhole cover is recommended.
- Outfall-catchment OF-217 (42 Ash Park Drive)
  - Replacement of the frame and cover is recommended for SWMH-760 as both the frame and cover were coming off together.
- Outfall-catchment OF-322 (166 Kotilk Street)
  - Replacement of the frame and covers for manholes SWMH-281, SWMH-282, SWMH-322 and SWMH-633. The manhole covers and frames were rusted over and in poor condition.
- Outfall-catchment OF-419 (70 Drinkwater Avenue)
  - Cleaning is recommended at the outfall as the outfall was 50% full of debris.
- Outfall-catchment OF-478 (215 Woodpecker Road)
  - Manhole, SWMH-1061 was covered with vegetation; to allow future access to the structure, removal of vegetation on the manhole cover is recommended.
- Outfall-catchment OF-580 (92 Tremont Street)
  - Catch basin, SWIN-282 was covered with vegetation; to allow future access to the structure, removal of vegetation on the manhole cover is recommended.
- Outfall-catchment OF-616 (1023 Turnpike Street)
  - Cleaning is recommended for catch basin SWIN-2591 and SWIN-2592 as floatables were observed in both structures.

- Outfall-catchment OF-723 (21 Plain Street)
  - Cleaning is recommended at the outfall as the outfall was 90% full of debris. Additionally, the structural integrity of the outfall is in poor condition. Maintenance or further rehabilitation such as lining, or replacement of the outfall is recommended.

- Outfall-catchment OF-754 (1050 Turnpike Street)
    - Cleaning is recommended within catch basins SWIN-2590, SWIN-2569, SWIN-2570 and SWIN-2571 as floatables and/or debris were observed.
- Outfall-catchment OF-759 (155 York Street)
    - Cleaning is recommended at the outfall as the outfall was 90% full of debris.
- Outfall-catchment OF-807 (14 Chase Run)
    - Grease and floatables were found in and on the grate of catch basin SWIN-677. **Immediate cleaning of the structure is required.**

Refined catchment delineations were developed for the 92 catchments visited are shown on **Figure 2: Refined Catchment Delineations**, attached. Also, an SVF analysis was conducted for the catchments visited, and no SVFs were identified for any catchments **Table 3: SVF Assessment** details the SVF assessment.

Recommendations

In conclusion, EP completed catchment investigations at 48 percent of the Town's outfall-catchments (72 out of 152). EP recommends the following:

- Complete the maintenance suggested above, which includes cleaning of structures, and either additional maintenance or replacement of drainage pipes,
- Complete the suggested follow-up suggested above, which includes assisting EP on locating the identified manhole and catch basin structures that could not be located during the catchment investigations, confirming pipe connectivity, and CCTV inspections in unmapped drainage connections. CCTV inspections are recommended up to the property line, and
- Continue IDDE catchment investigations, investigating a portion of the remaining catchments each year for the next 5 years.

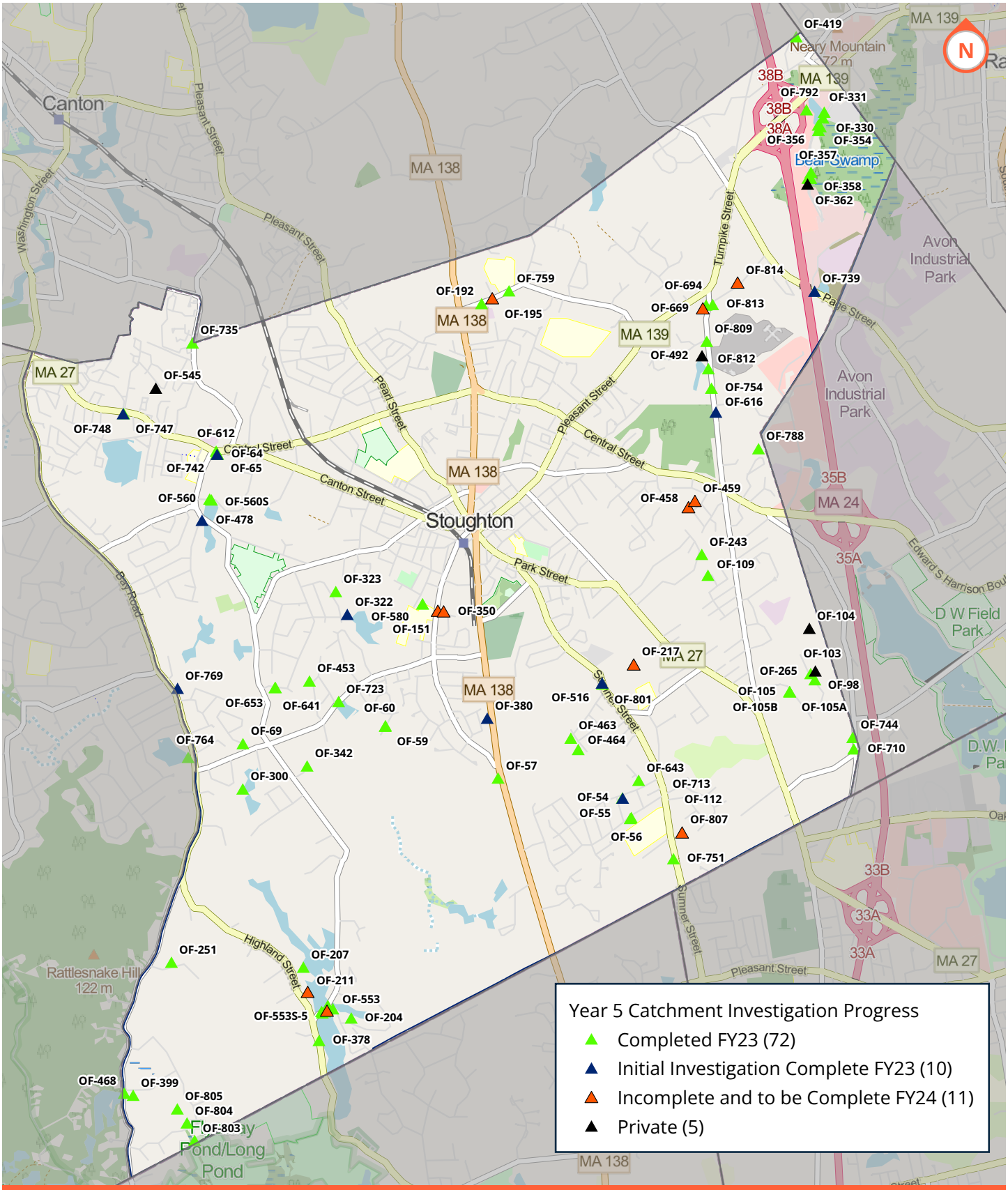
Attachments

Certification Page
Figure 1: Catchment Investigation Progress
Figure 2: Refined Catchment Delineations
Table 1: Catchment Investigations Locations
Table 2: Stormwater Field Test Kit Results
Table 3: SVF Assessment
Catchment Packages

MS4 CERTIFICATION PAGE

FIGURE 1

Catchment Investigation Progress

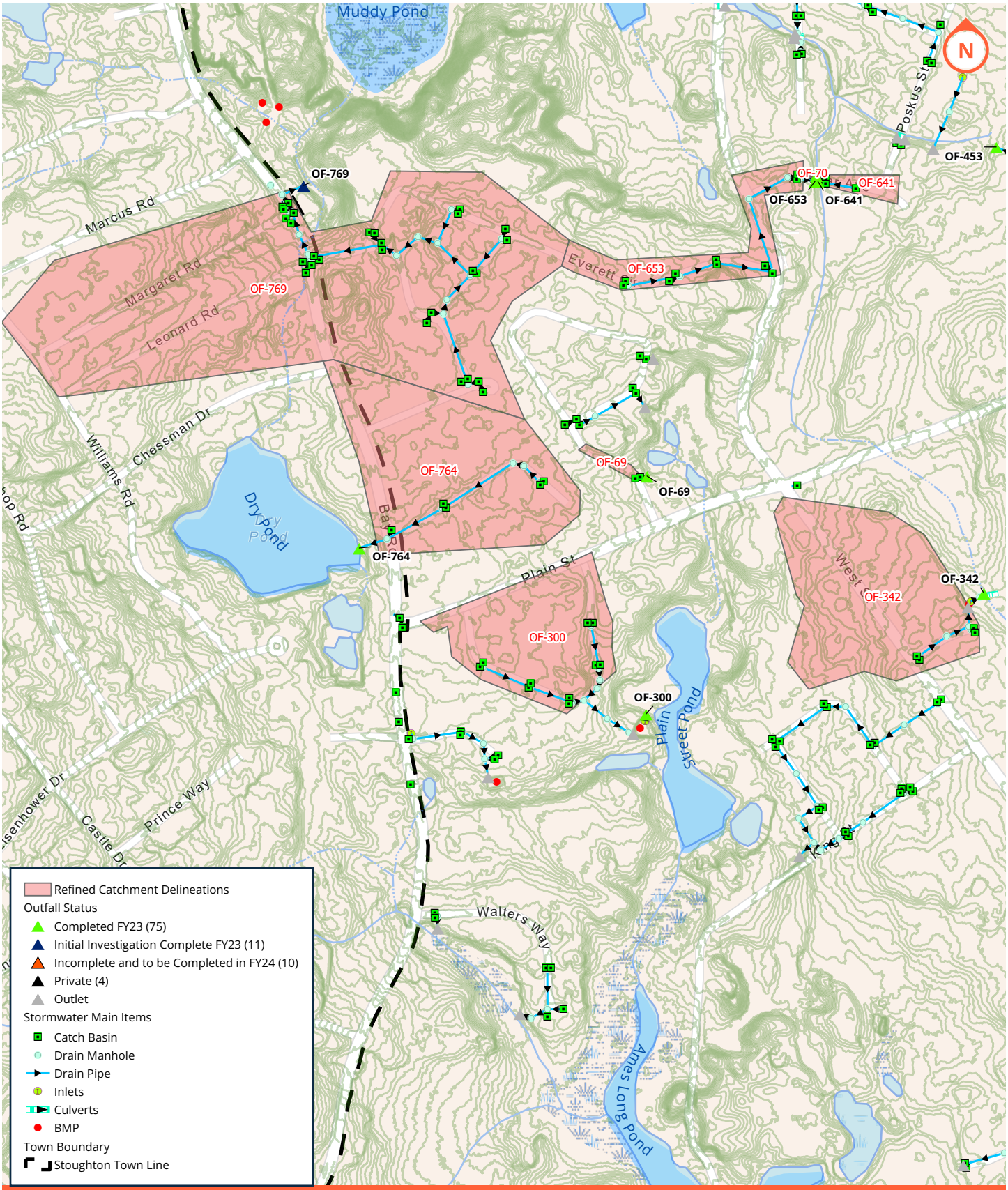


ENVIRONMENTAL PARTNERS
An Apex Company

Figure 1
Catchment Investigation Progress
Stoughton, MA
June 2023

FIGURE 1

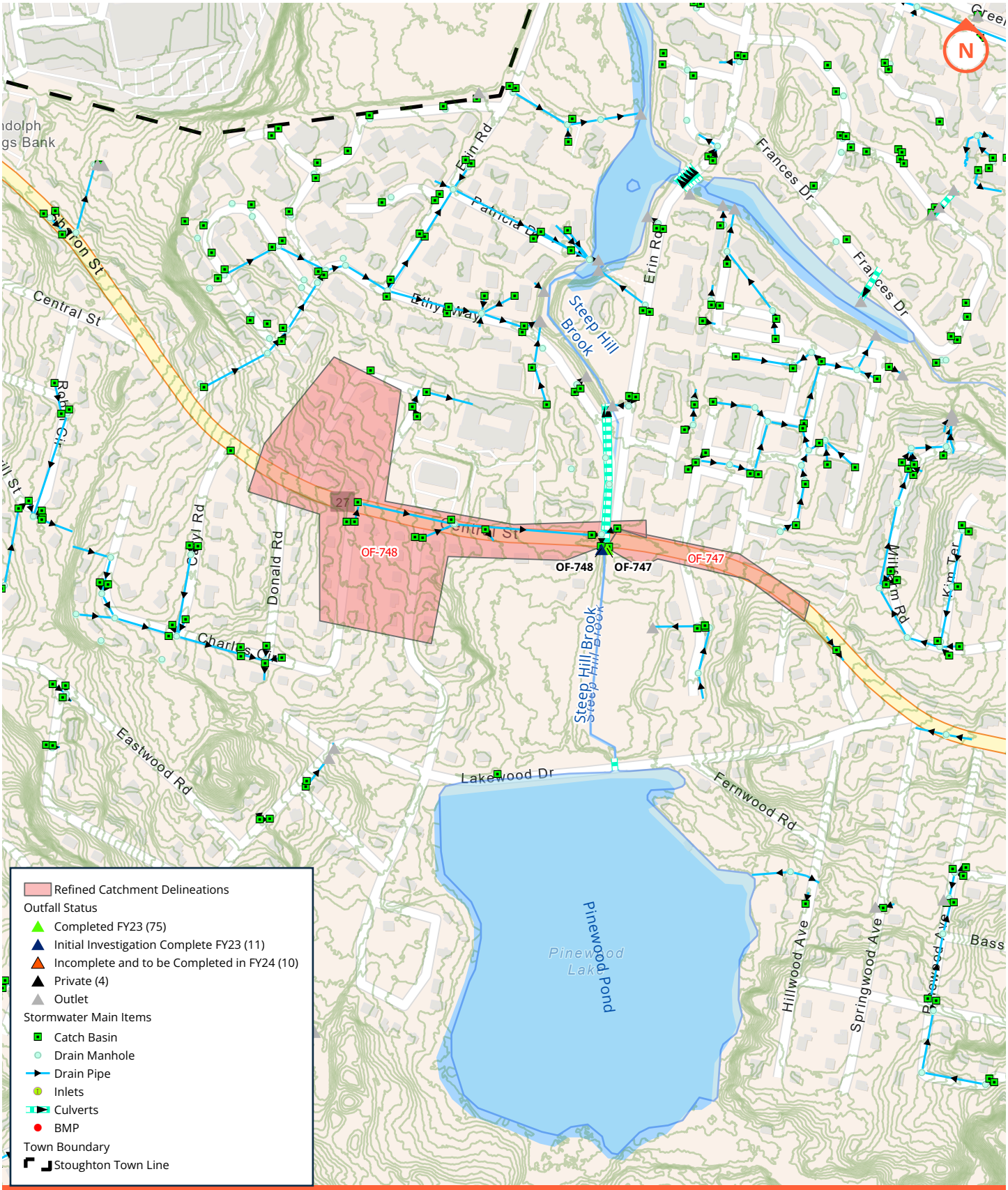
Refined Catchment Delineations



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

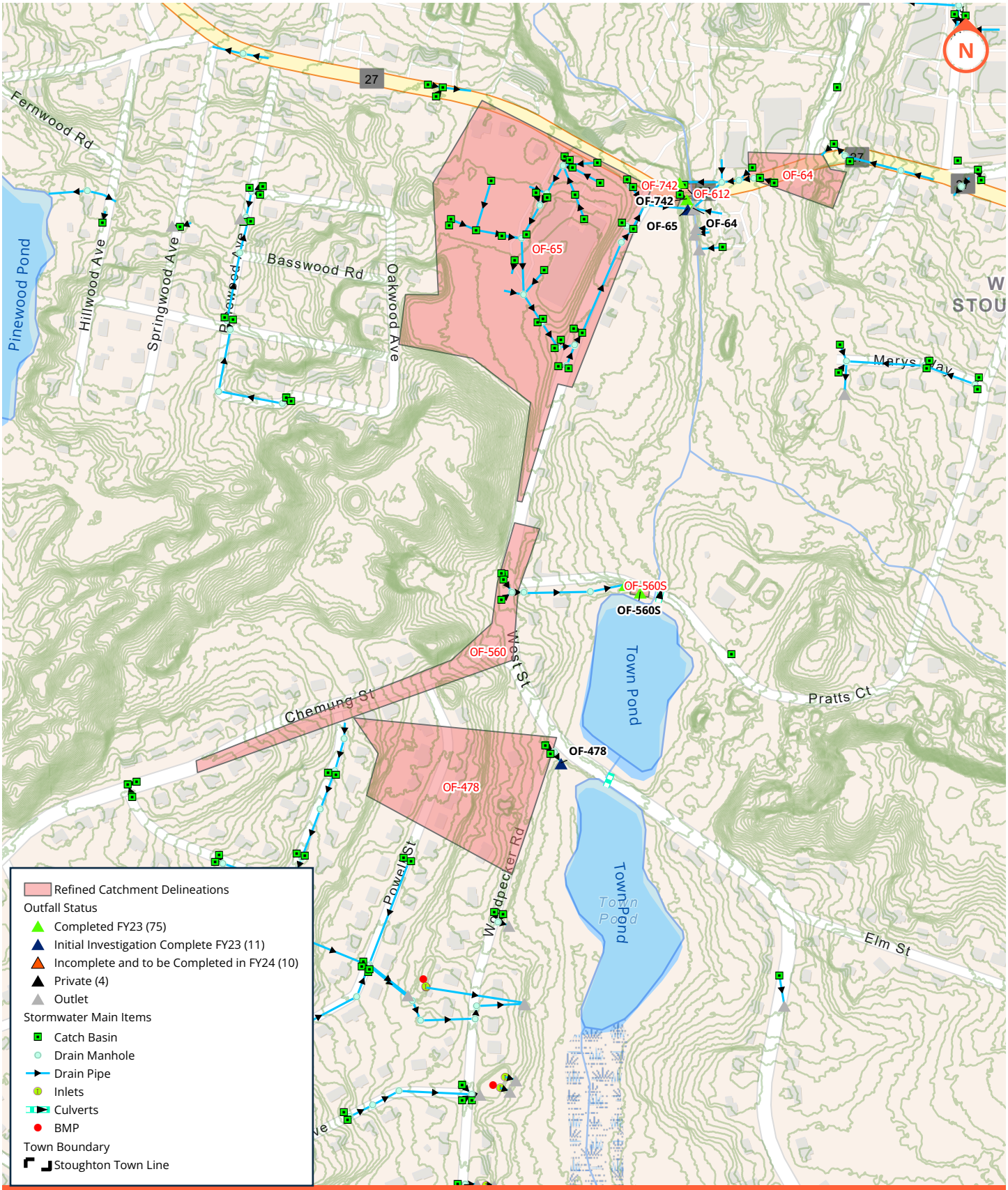


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
An Apex Company

0 500 1,000 2,000
Feet

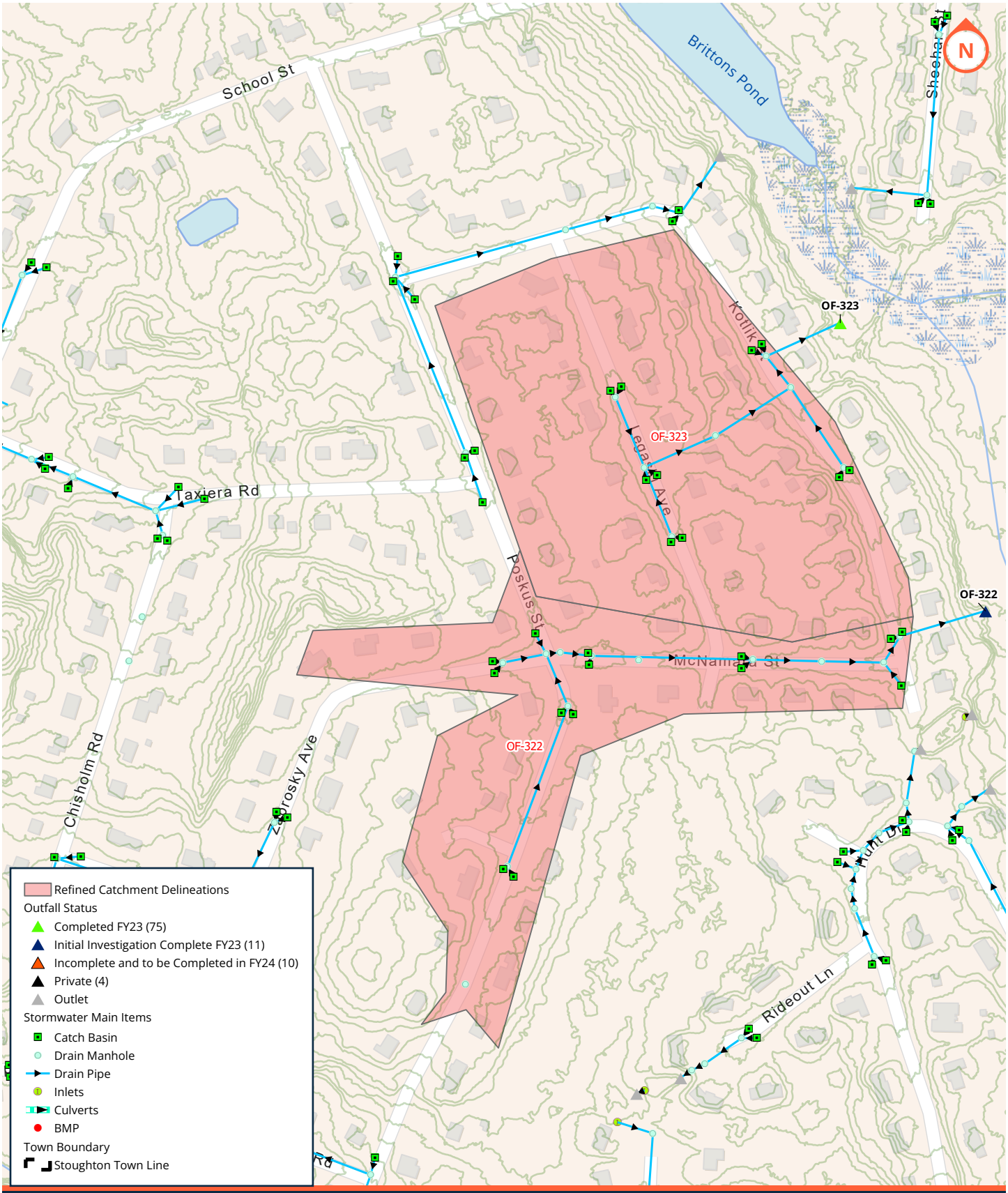
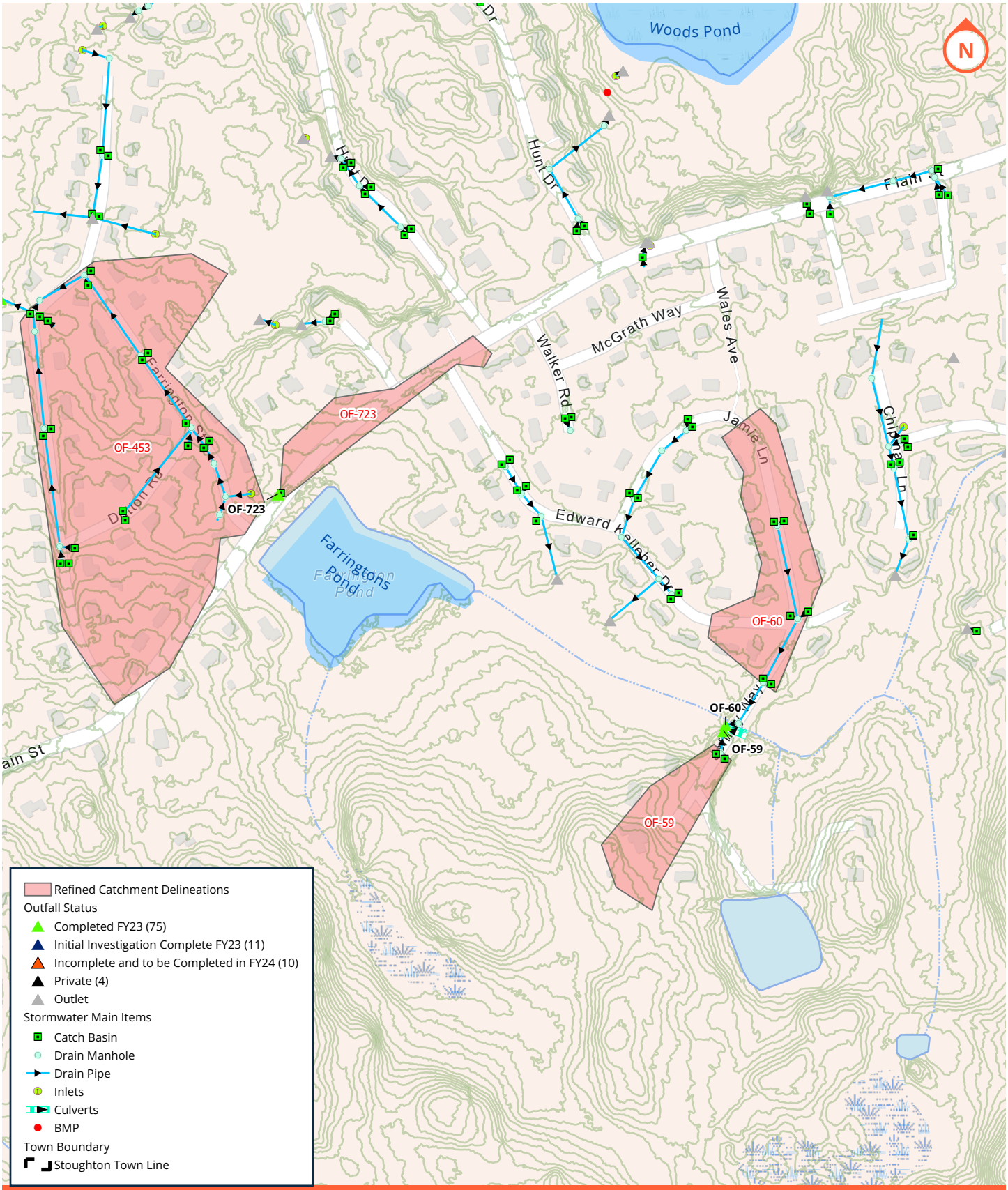


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

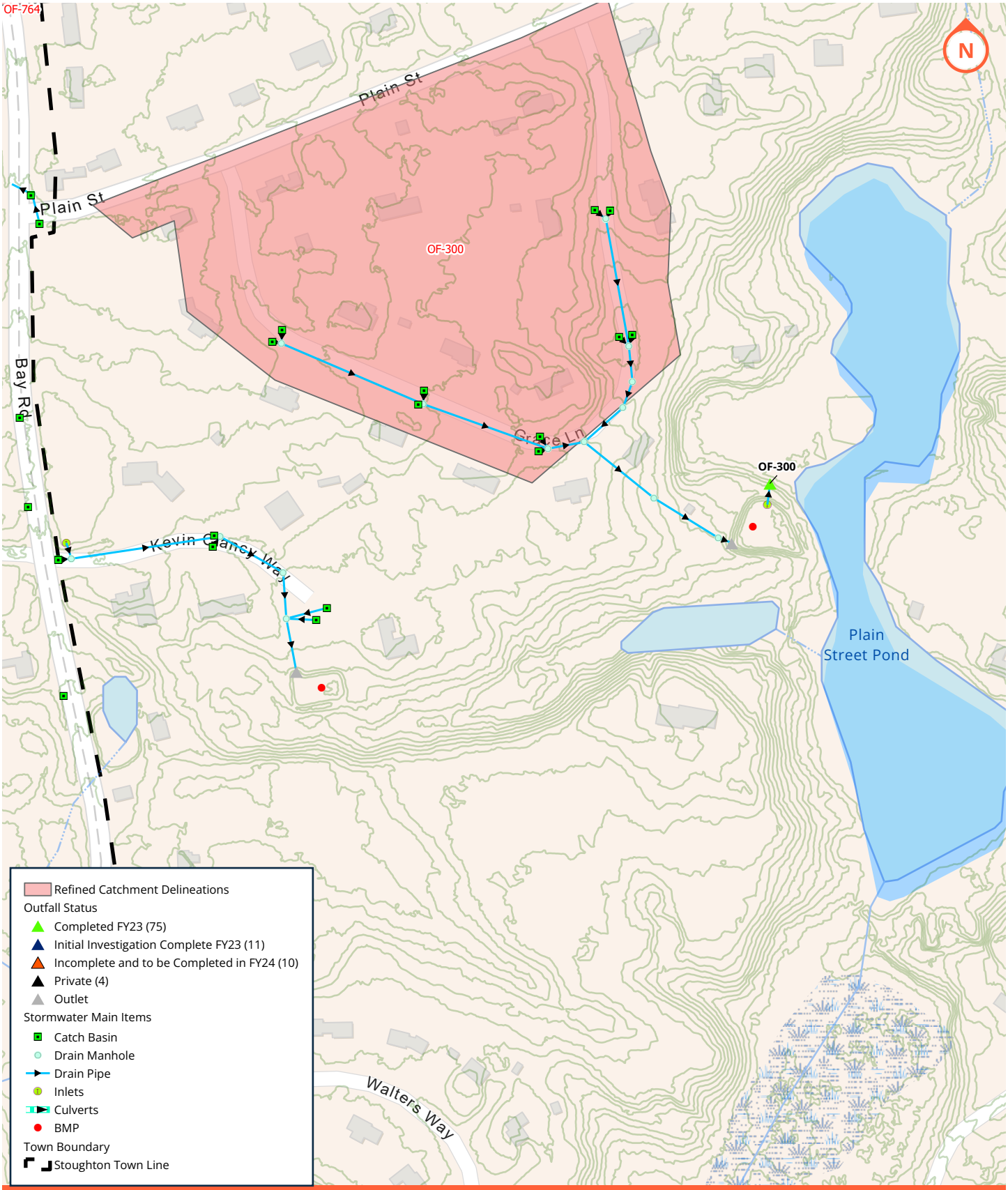
ENVIRONMENTAL PARTNERS
An Apex Company



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000 Feet



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

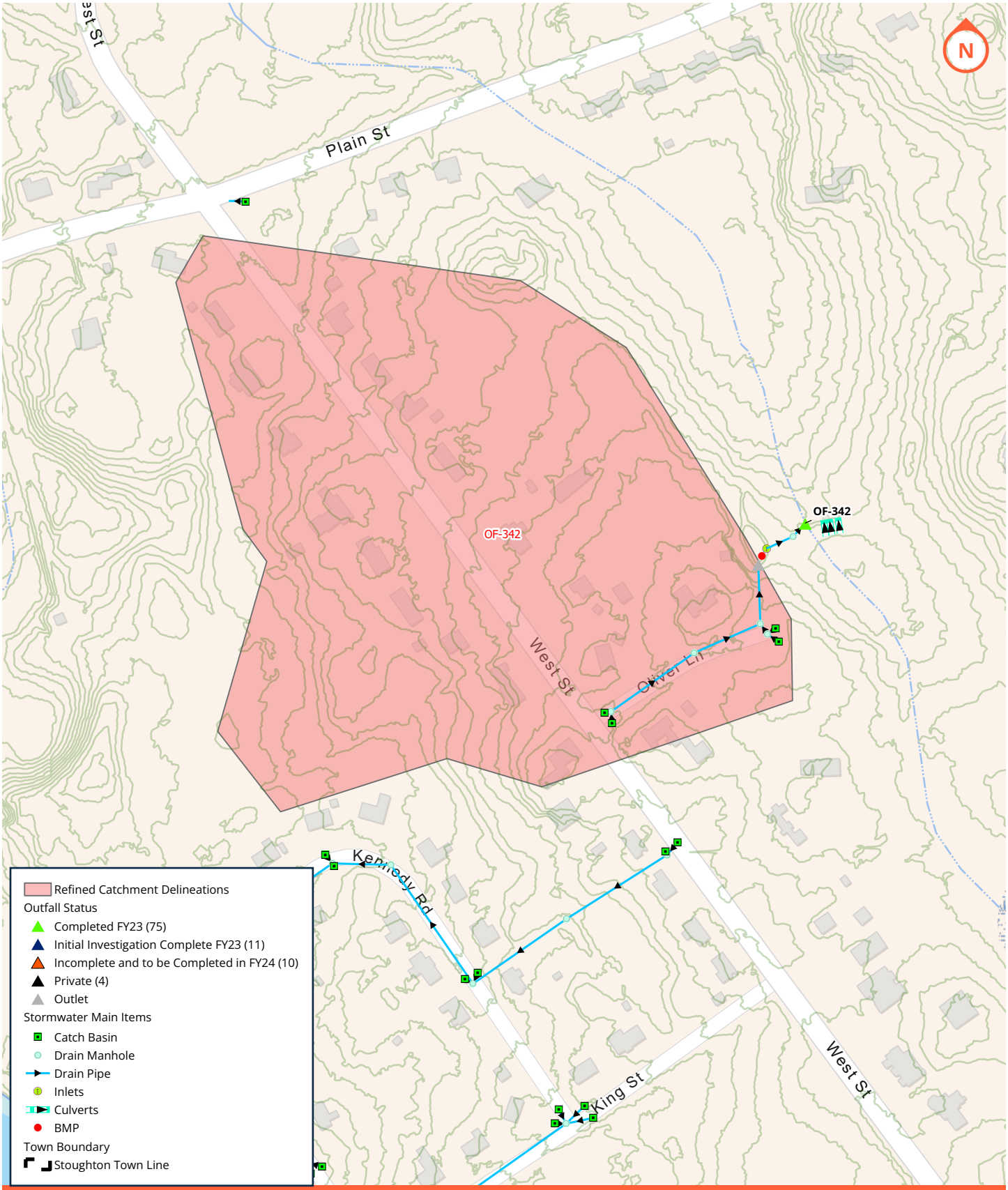
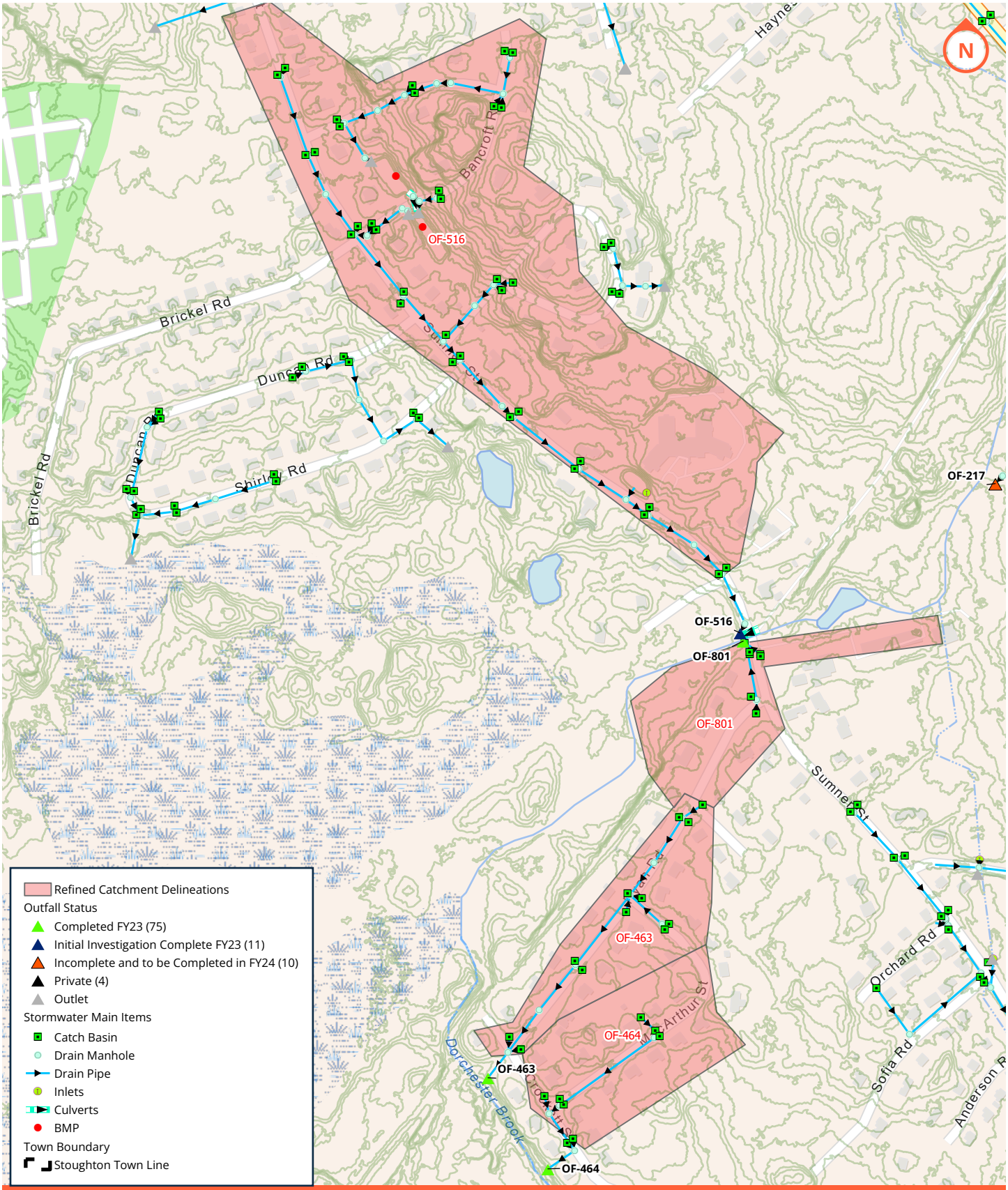


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
— An Apex Company —

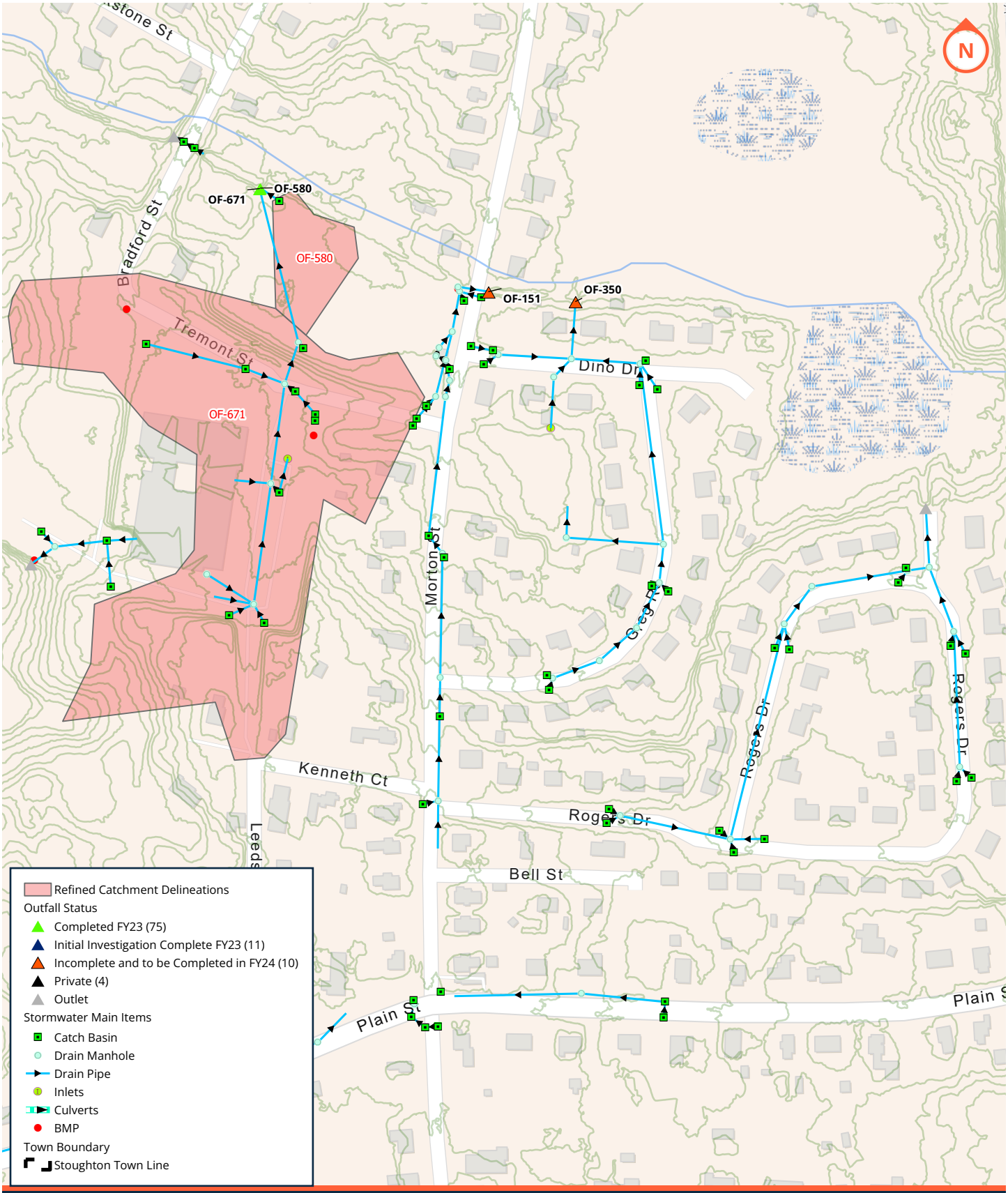
0 500 1,000 2,000
Feet



ENVIRONMENTAL PARTNERS
An Apex Company

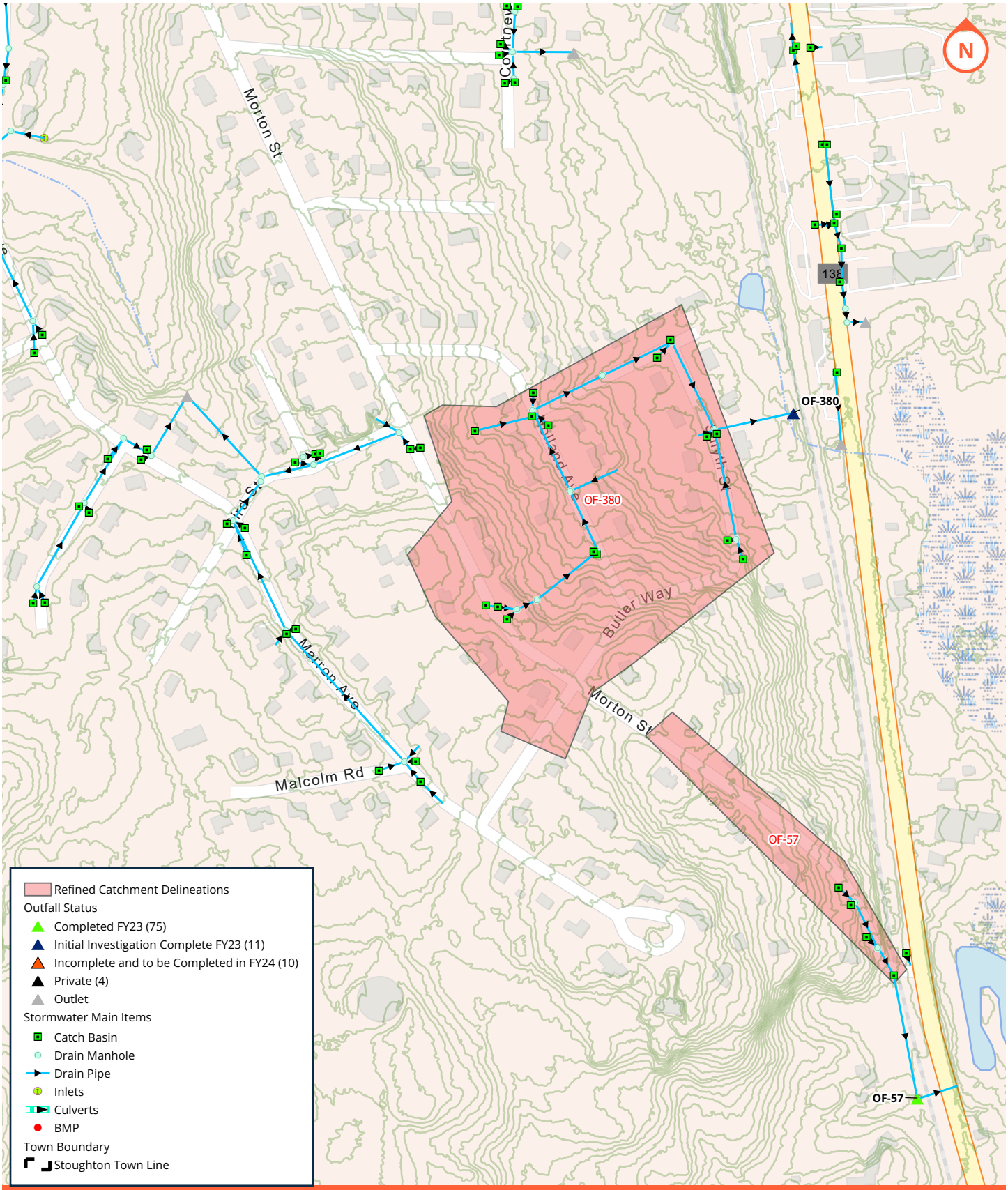
Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet



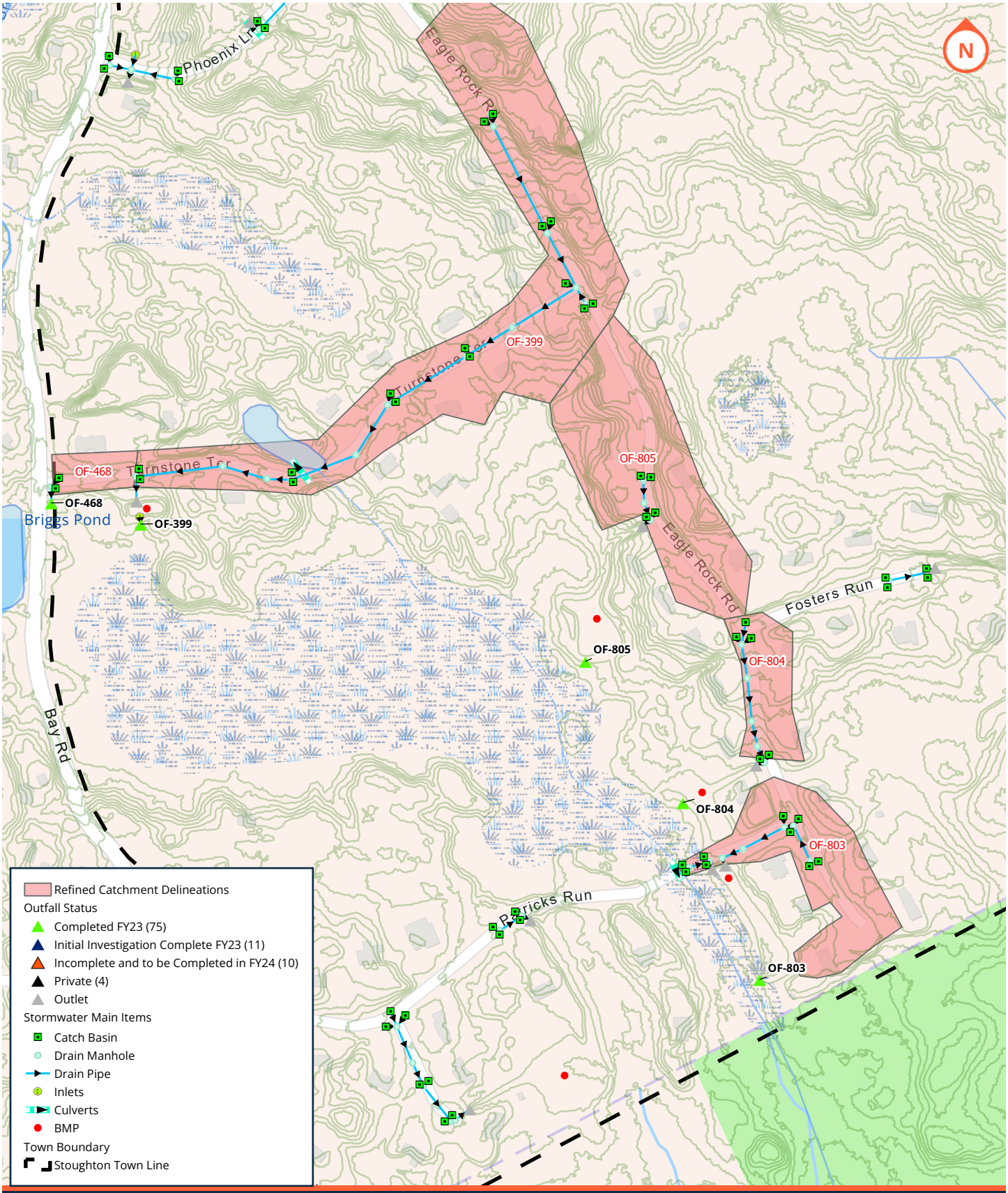
ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

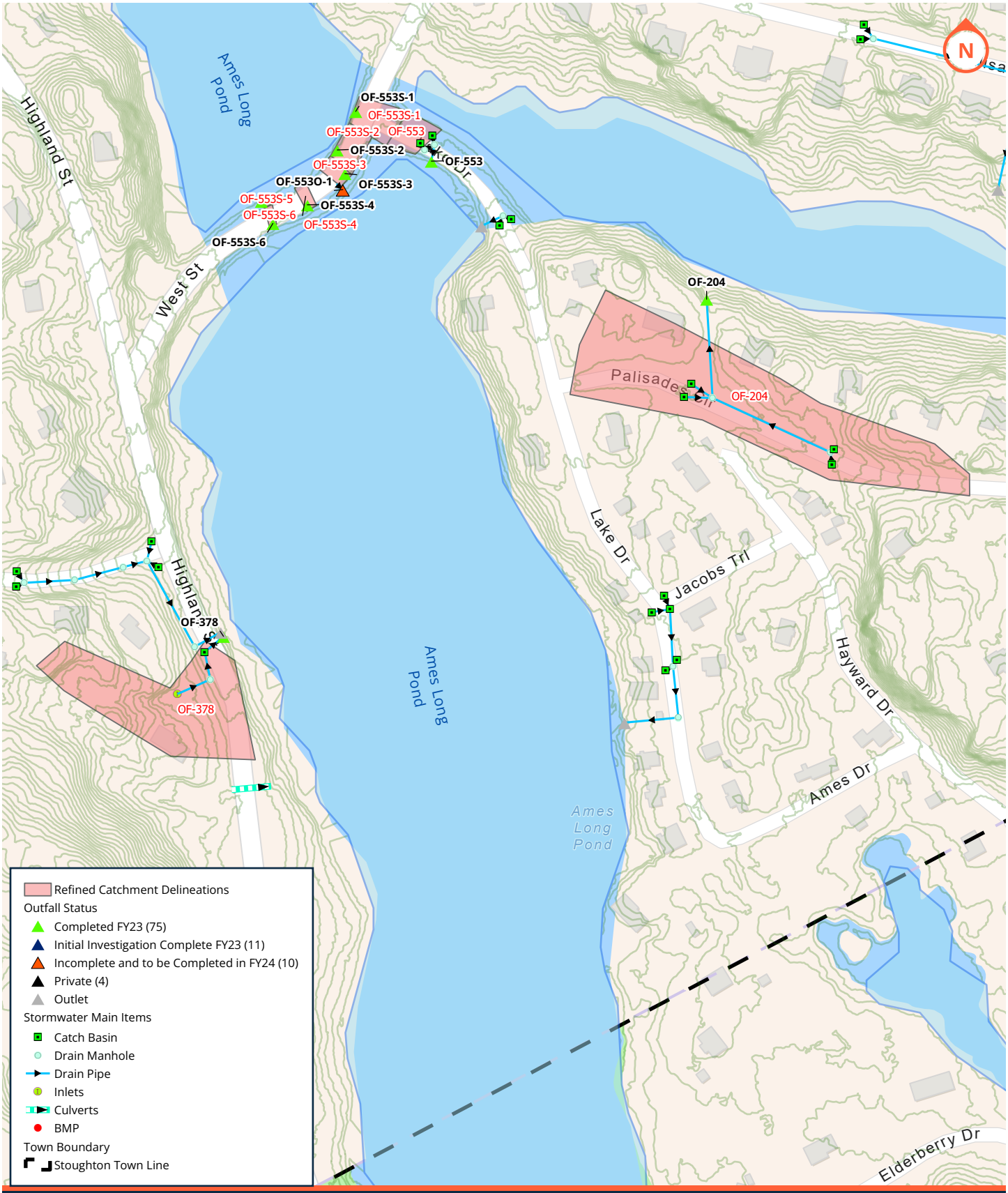


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
An Apex Company

0 500 1,000 2,000 Feet

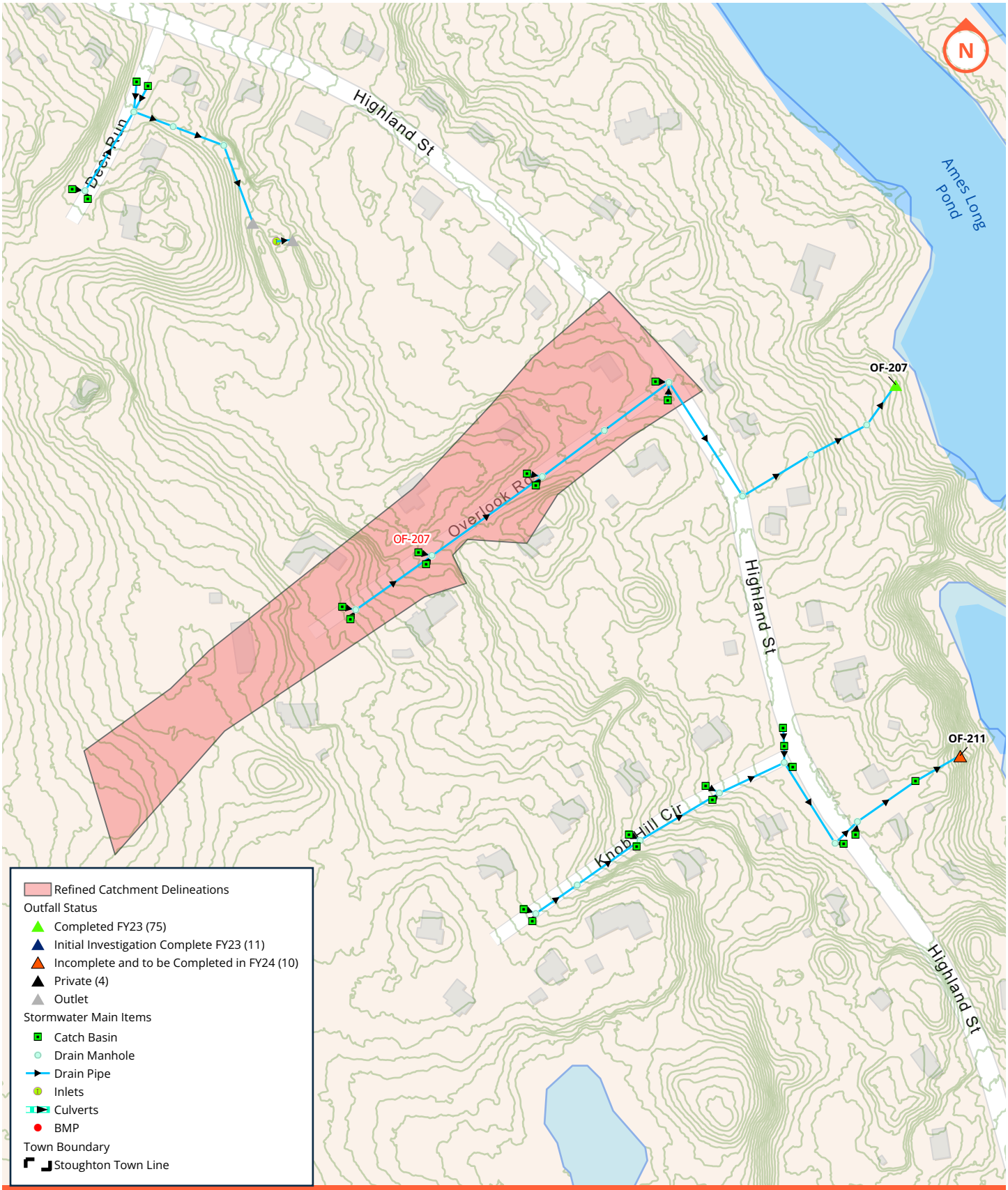
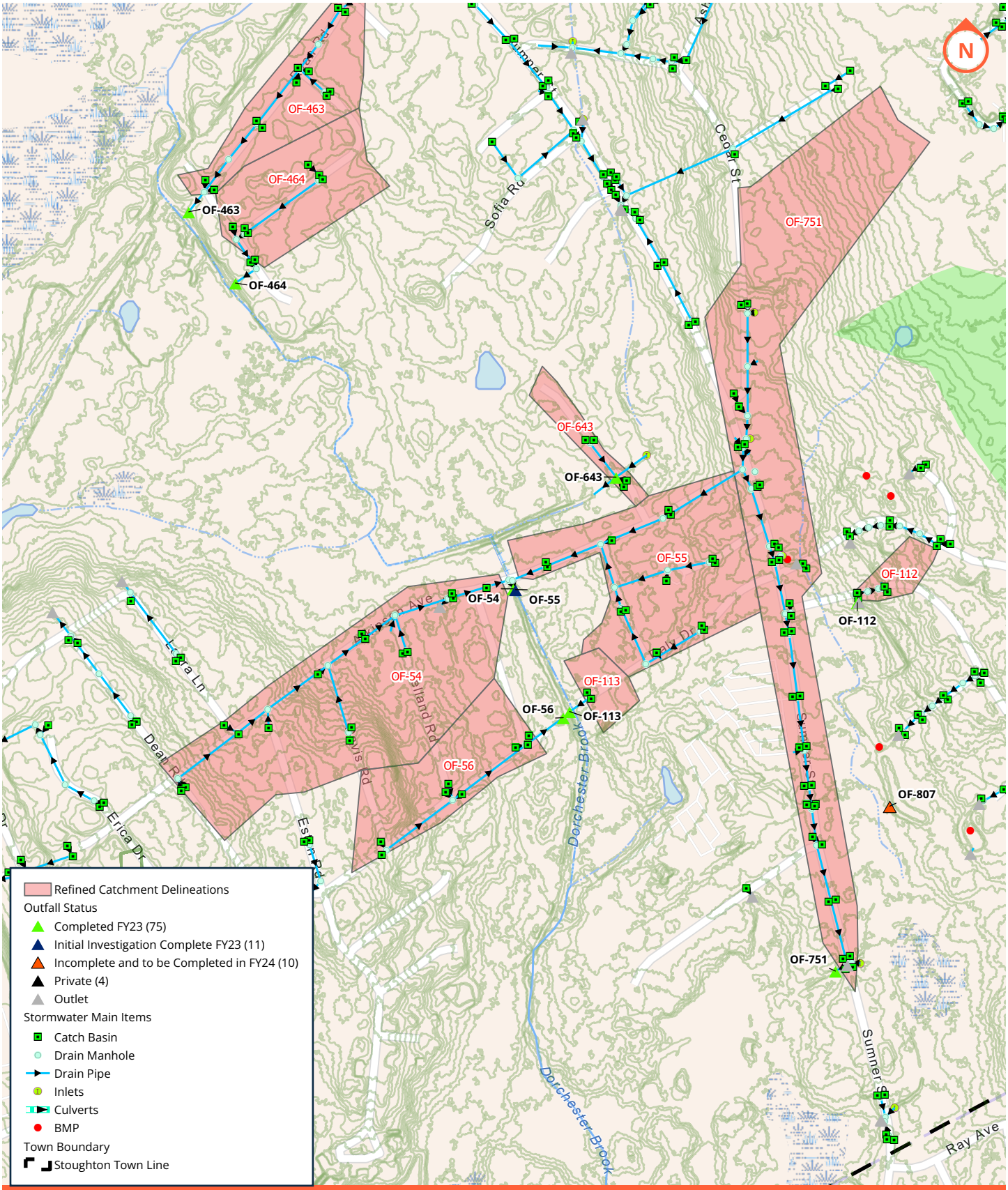


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
An Apex Company

0 500 1,000 2,000 Feet



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

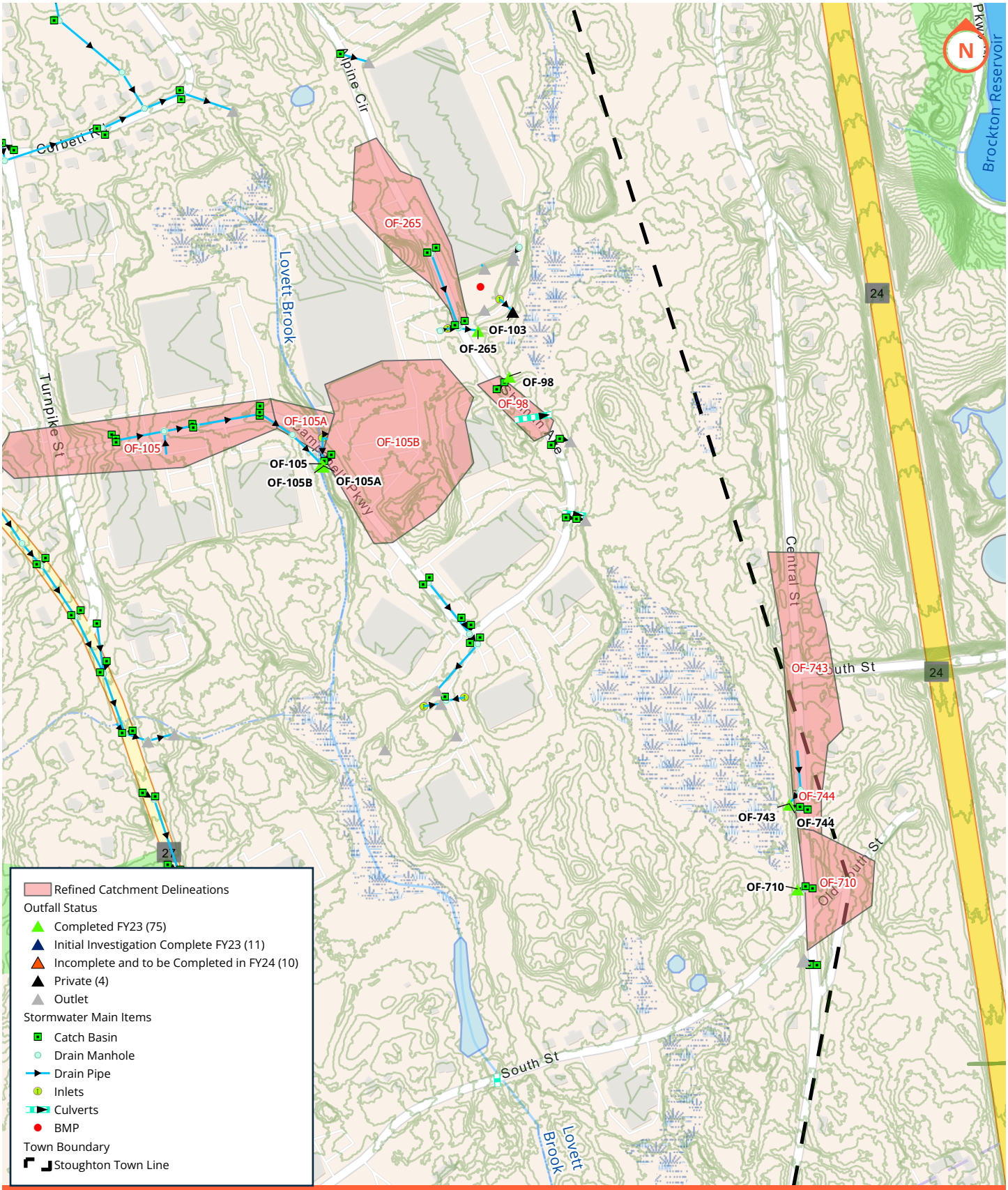
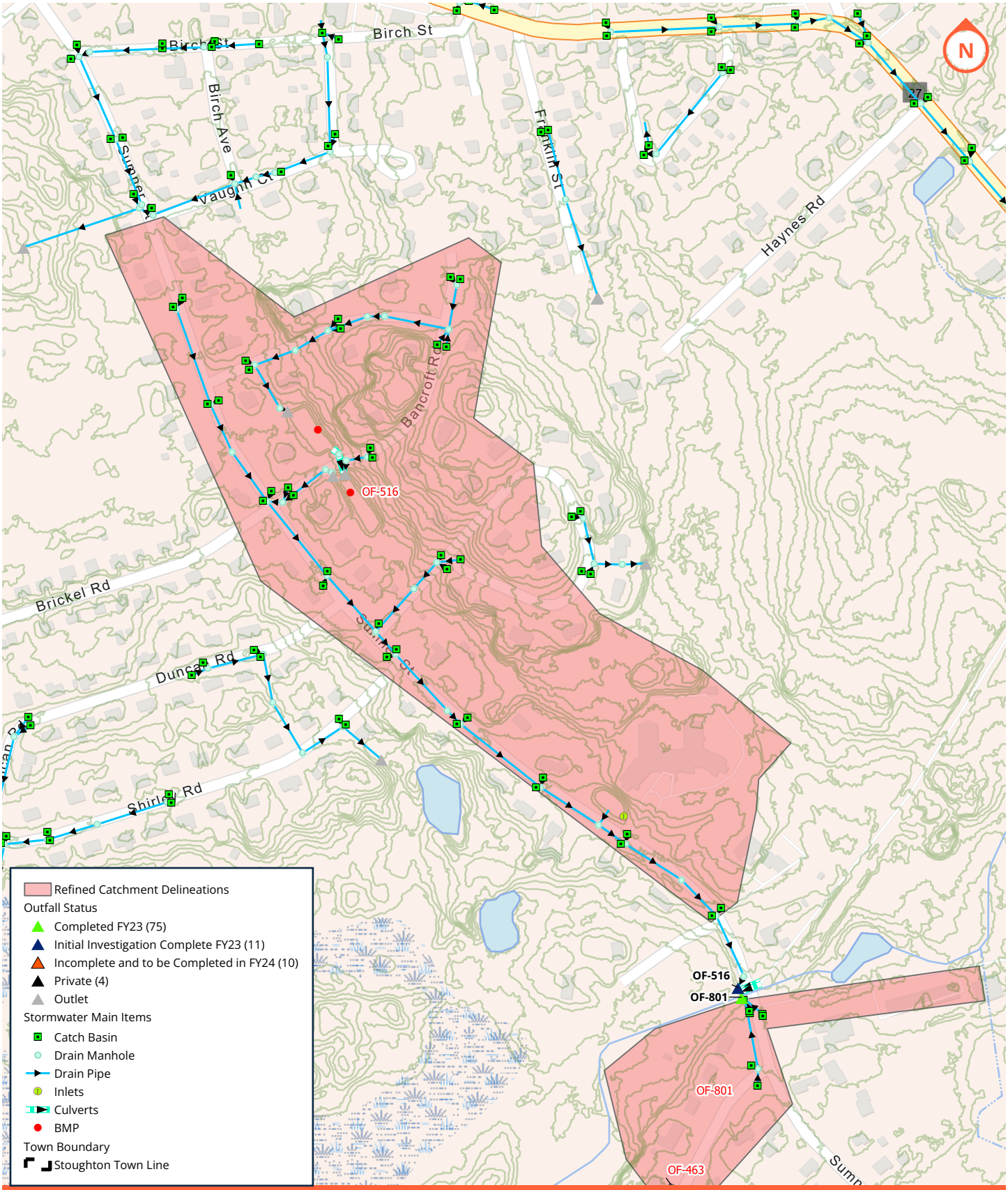


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
An Apex Company



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000 Feet

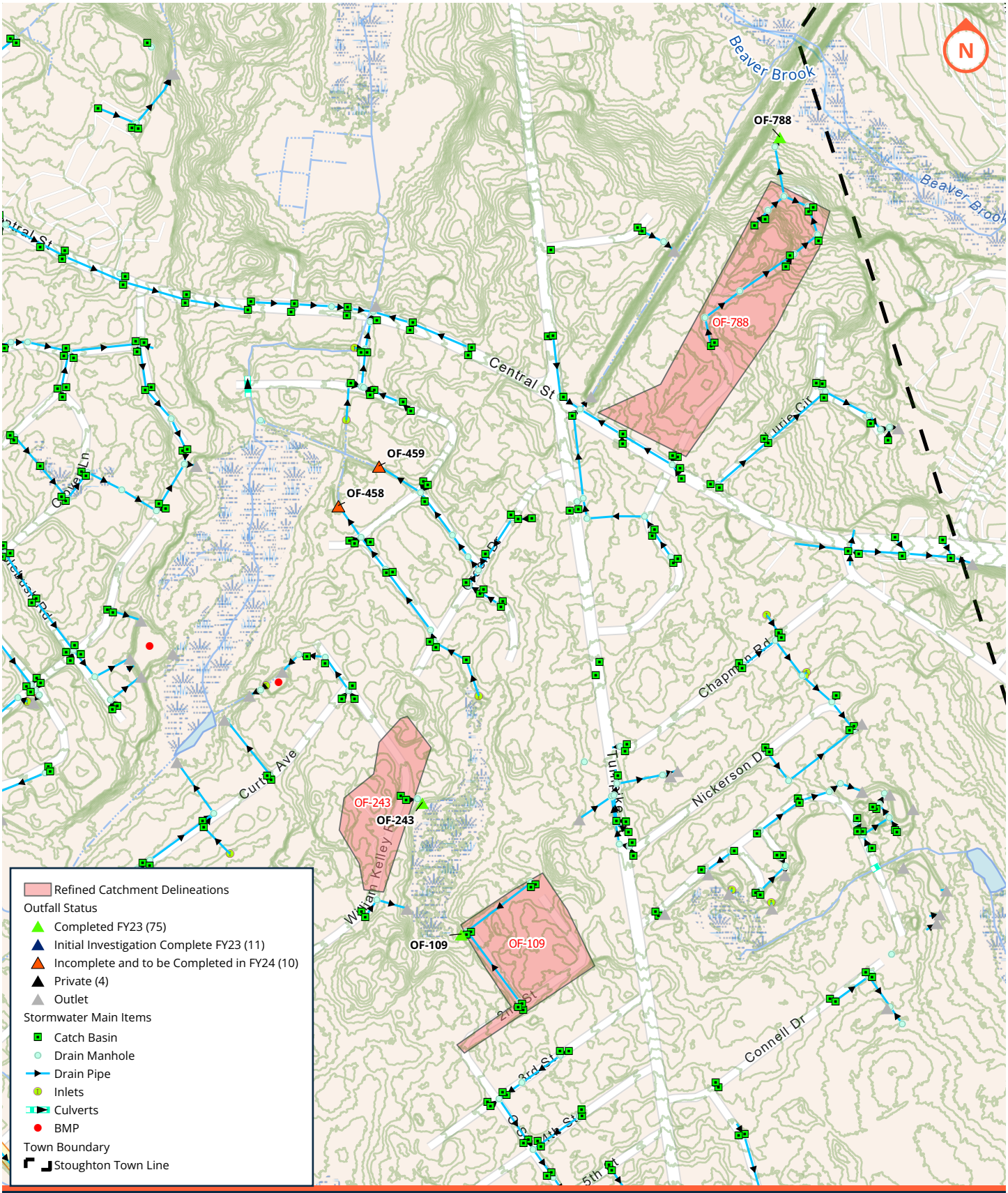
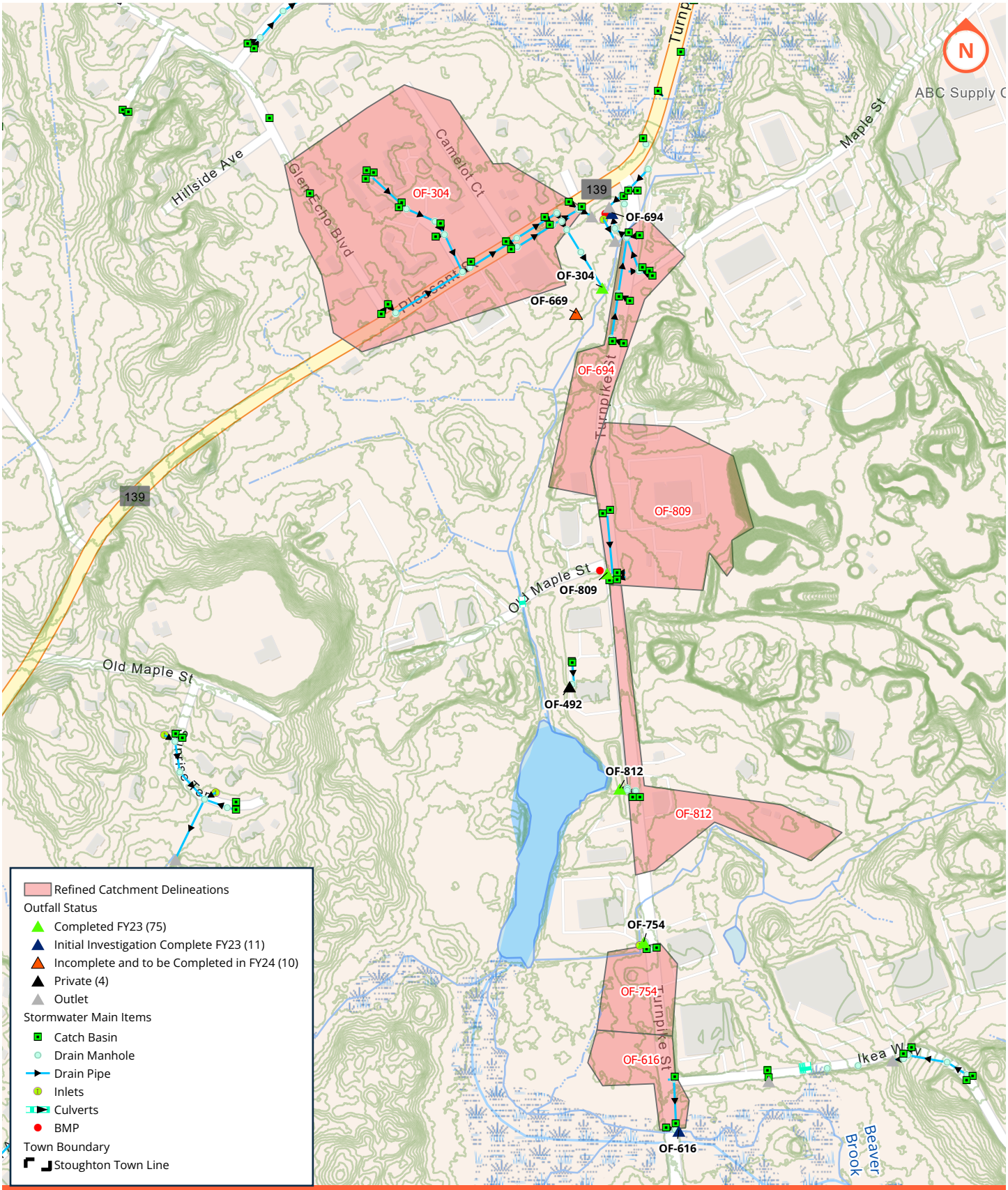


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

ENVIRONMENTAL PARTNERS
An Apex Company



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

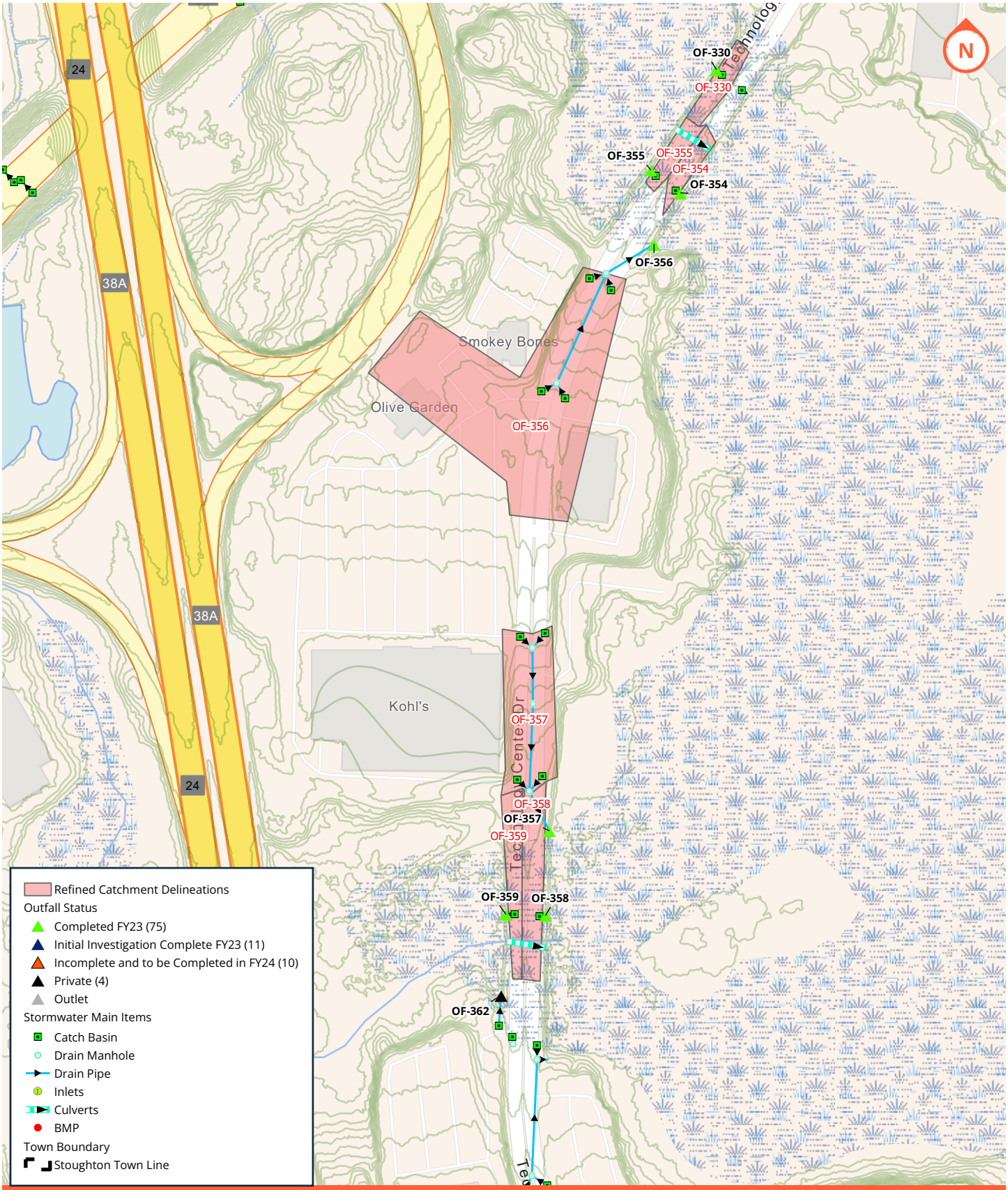


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
An Apex Company

0 500 1,000 2,000 Feet

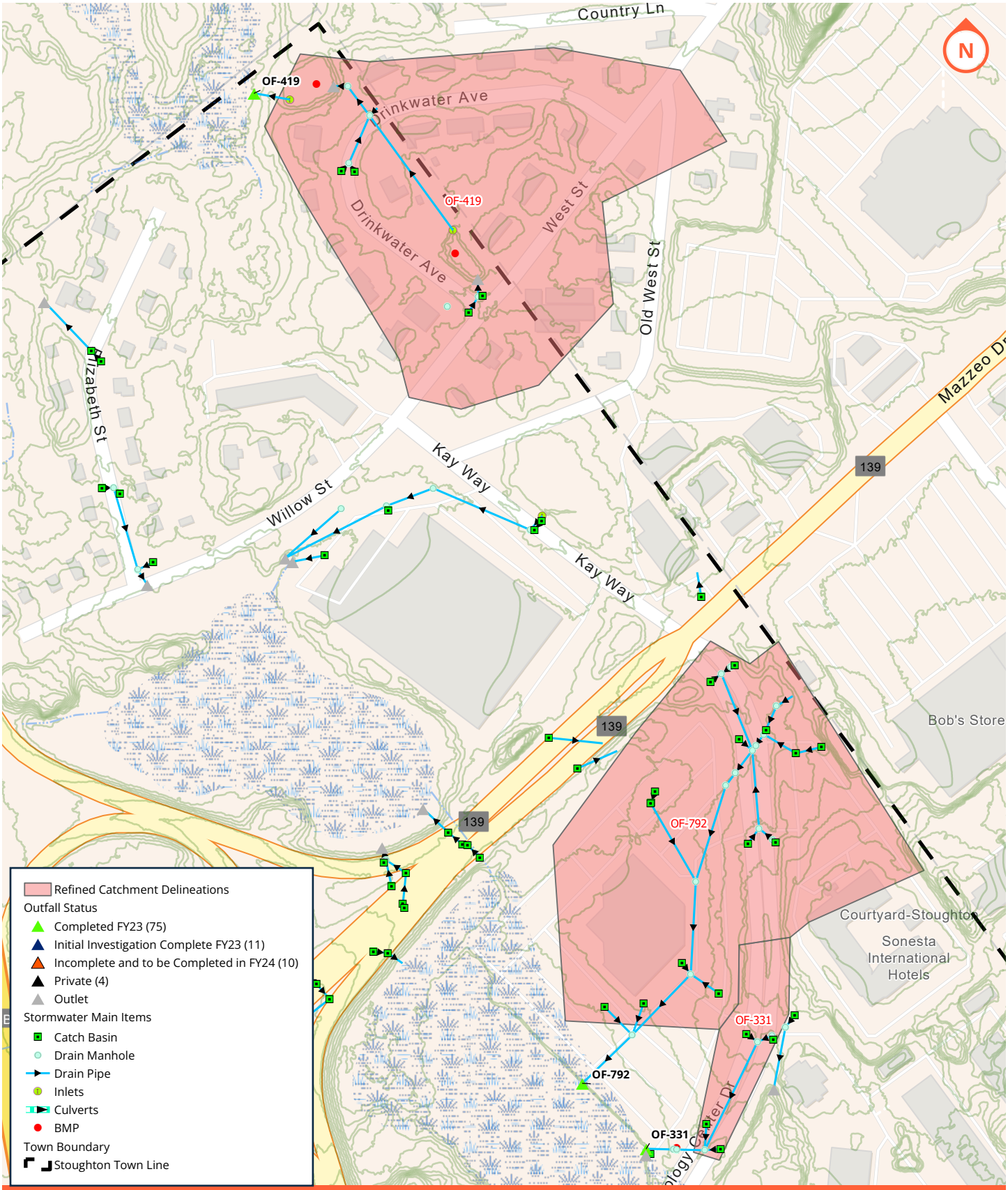
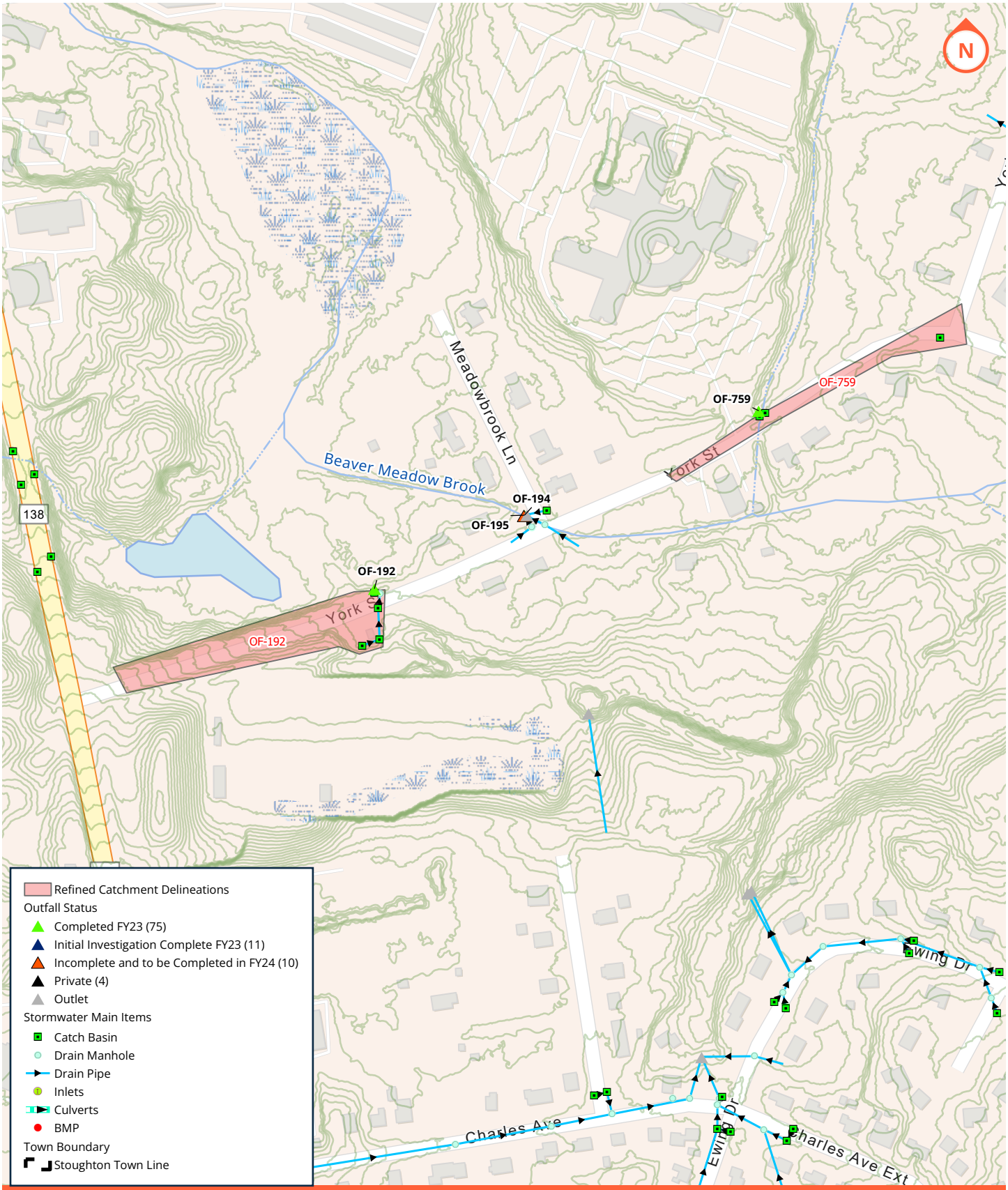


Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

ENVIRONMENTAL PARTNERS
An Apex Company



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
Refined Catchment Delineations
Stoughton, MA
June 2023

0 500 1,000 2,000
Feet

TABLE 1

Catchment Investigations Locations

Table 1: Catchment Investigation Locations
Stoughton, MA

Outfall ID	Receiving Water	Approximate Street Address	Catchment Investigation Date	Flow Status	Catchment Investigation Status
OF-105	Lovett Brook	100 Campanelli Parkway	3/23/2023	Flowing	Complete
OF-105A (NEW)	Lovett Brook	100 Campanelli Parkway	3/23/2023	Dry	Complete
OF-105B (NEW)	Lovett Brook	100 Campanelli Parkway	3/23/2023	Dry	Complete
OF-109	Unnamed Wetlands to Beaver Brook 2	81 D Street	4/25/2023	Flowing	Complete
OF-112	Unnamed Tributary near Dorchester Brook	180 Chase Run	4/10/2023	Dry	Complete
OF-113	Dorchester Brook	96 Daly Drive	4/3/2023	Dry	Complete
OF-192	Beaver Meadow Brook	63 York Street	4/4/2023	Flowing	Complete
OF-194	Beaver Meadow Brook	Intersection of Meadowbrook Lane and York Street	4/4/2023	Culvert	Complete
OF-195	Beaver Meadow Brook	Intersection of Meadowbrook Lane and York Street	4/4/2023	Flowing	Incomplete
OF-204	Ames Long Pond	22 Palisades Circle	4/27/2023	Dry	Complete
OF-207	Ames Long Pond	450 Highland Street	4/11/2023	Flowing	Complete
OF-211	Ames Long Pond	524 Highland Street	3/21/2023	Flowing	Incomplete
OF-217	Unnamed Tributary to Beaver Brook 6	42 Ash Park Drive	4/25/2023	Dry	Incomplete
OF-243	Unnamed Wetlands to Beaver Brook 2	261 William Kelley Road	4/25/2023	Dry	Complete
OF-251	Unnamed Tributary to Ames Long Pond	52 Jordan Drive	4/27/2023	Dry	Complete
OF-265	Lovett Brook	100 Campanelli Parkway	3/23/2023	Dry	Complete
OF-300	Plain Street Pond	76 Grace Lane	3/30/2023	Dry	Complete
OF-304	Unnamed Tributary To Beaver Brook	951 Pleasant Street	4/4/2023	Dry	Complete
OF-322	Woods Pond	166 Kotilk Street	4/10/2023	Dry	Initial Investigation Complete
OF-323	Unnamed Tributary to Steep Hill Brook 3	98 Kotilk Street	4/27/2023	Dry	Complete
OF-330	Unnamed Wetlands to Three Swamp Brook	100 Technology Center Drive	3/30/2023	Dry	Complete
OF-331	Unnamed Wetlands to Three Swamp Brook	100 Technology Center Drive	3/30/2023	Dry	Complete
OF-342	Unnamed Tributary to Town Pond 2	10 Oliver Lane	3/30/2023	Dry	Complete
OF-350	Unnamed Tributary to Steep Hill Brook 2	24 Dino Drive	4/25/2023	Flowing	Incomplete
OF-354	Unnamed Wetlands to Three Swamp Brook	301 Technology Center Drive	4/4/2023	Dry	Complete
OF-355	Unnamed Wetlands to Three Swamp Brook	301 Technology Center Drive	4/4/2023	Dry	Complete
OF-356	Unnamed Wetlands to Three Swamp Brook	301 Technology Center Drive	4/10/2023	Dry	Complete
OF-357	Unnamed Wetlands to Three Swamp Brook	501 Technology Center Drive	3/30/2023	Dry	Complete
OF-358	Unnamed Wetlands to Three Swamp Brook	501 Technology Center Drive	4/10/2023	Dry	Complete
OF-359	Unnamed Wetlands to Three Swamp Brook	501 Technology Center Drive	4/10/2023	Dry	Complete
OF-362	Unnamed Wetlands to Three Swamp Brook	601 Technology Center Drive	3/23/2023	Private	Private
OF-378	Ames Long Pond	769 Highland Street	4/27/2023	Flowing	Complete
OF-380	Unnamed Tributary to Dorchester Brook	20 Smyth Street	3/31/2023	Dry	Initial Investigation Complete
OF-399	Briggs Pond	30 Turnstone Terrace	3/21/2023	Flowing	Complete
OF-419	Unnamed Tributary	70 Drinkwater Avenue	3/23/2023	Dry	Complete
OF-453	Unnamed Tributary to Town Pond	129 Swanson Terrace	3/30/2023	Flowing	Complete
OF-458	Unnamed Tributary to Beaver Brook 3	111 East Vanston Road	4/27/2023	Flowing	Incomplete
OF-459	Unnamed Tributary to Beaver Brook 3	71 East Vanston Road	4/27/2023	Flowing	Incomplete
OF-463	Unnamed Tributary to Dorchester Brook	143 Crockett Street	4/3/2023	Dry	Complete
OF-464	Unnamed Tributary to Dorchester Brook	35 Crockett Street	3/31/2023	Dry	Complete
OF-468	Briggs Pond	20 Turnstone Terrace	3/21/2023	Dry	Complete
OF-478	Town Pond	215 Woodpecker Road	3/21/2023	Dry	Initial Investigation Complete
OF-492	Unnamed Tributary To Beaver Brook	1074 Turnpike Street	3/23/2023	Private	Private
OF-516	Unnamed Tributary to Beaver Brook 6	3 Sumner Street	4/3/2023	Dry	Initial Investigation Complete
OF-54	Dorchester Brook	125 Atkinson Avenue	4/3/2023	Flowing	Complete

Table 1: Catchment Investigation Locations
Stoughton, MA

Outfall ID	Receiving Water	Approximate Street Address	Catchment Investigation Date	Flow Status	Catchment Investigation Status
OF-55	Dorchester Brook	107 Atkinson Avenue	4/11/2023	Flowing	Initial Investigation Complete
OF-553	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-553O-1 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Incomplete
OF-553S-1 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-553S-2 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-553S-3 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-553S-4 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-553S-5 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-553S-6 (NEW)	Ames Long Pond	1782 West Street	4/27/2023	Dry	Complete
OF-56	Dorchester Brook	11 Daly Drive Extension	4/11/2023	Dry	Complete
OF-560(NEW)	Town Pond	144 West Street	4/11/2023	Dry	Complete
OF-560S(NEW)	Town Pond	144 West Street	4/11/2023	Dry	Complete
OF-57	Unnamed Tributary to Dorchester Brook	1493 Morton Street	4/11/2023	Dry	Complete
OF-580	Unnamed Tributary to Steep Hill Brook 2	92 Tremont Street	4/25/2023	Dry	Complete
OF-59	Unnamed Tributary near Woods Pond	41 Jeffery Way	3/30/2023	Dry	Complete
OF-60	Unnamed Tributary near Woods Pond	30 Jeffery Way	3/30/2023	Flowing	Complete
OF-612	Unnamed Tributary (MA73-32)	1749 Central Street	4/4/2023	Dry	Complete
OF-616	Beaver Brook	1023 Turnpike Street	4/4/2023	Dry	Initial Investigation Complete
OF-64	Unnamed Tributary to Steep Hill Brook	1810 Central Street	4/25/2023	Dry	Complete
OF-641	Unnamed Tributary to Town Pond	45 Kwedar Avenue	3/30/2023	Dry	Complete
OF-643	Coweeset Brook	18 Fitzpatrick Street	4/25/2023	Flowing	Complete
OF-65	Unnamed Tributary (MA73-32)	1810 Central Street	4/25/2023	Dry	Initial Investigation Complete
OF-653	Unnamed Tributary to Town Pond	33 Kwedar Avenue	3/30/2023	Dry	Complete
OF-669	Unnamed Tributary To Beaver Brook	951 Pleasant Street	3/23/2023	Dry	Incomplete
OF-671	Unnamed Tributary to Steep Hill Brook 2	92 Tremont Street	4/25/2023	Dry	Complete
OF-69	Plain Street Pond	23 Plain Drive	3/30/2023	Dry	Complete
OF-694	Unnamed Tributary To Beaver Brook	951 Pleasant Street	4/4/2023	Dry	Initial Investigation Complete
OF-70	Unnamed Tributary to Town Pond	32 Kwedar Avenue	3/30/2023	Culvert	Complete
OF-710	Unnamed Wetlands near Lovett Brook 2	Intersection of Central Street and Old South Street	3/23/2023	Dry	Complete
OF-723	Unnamed Pond near Woods Pond	21 Plain Street	3/30/2023	Dry	Complete
OF-735	East Branch Neponset River	358-366 Island Street	3/23/2023	Dry	Complete
OF-739	Unnamed Pond near Three Swamp Brook	104 Page Street	3/30/2023	Dry	Initial Investigation Complete
OF-742	Unnamed Tributary to Steep Hill Brook	1749 Central Street	4/11/2023	Dry	Complete
OF-743	Unnamed Wetlands near Lovett Brook 2	63 Central Street	3/23/2023	Town of Avon	Complete
OF-744	Unnamed Wetlands near Lovett Brook 2	63 Central Street	3/23/2023	Dry	Complete
OF-747	Steep Hill Brook	2050 Central Street	4/27/2023	Dry	Complete
OF-748	Steep Hill Brook	2070 Central Street	4/27/2023	Dry	Initial Investigation Complete
OF-751	Coweeset Brook	1027 Sumner Street	4/11/2023	Flowing	Complete
OF-754	Unnamed Tributary To Beaver Brook	1050 Turnpike Street	4/4/2023	Dry	Complete
OF-759	Beaver Meadow Brook	155 York Street	3/30/2023	Dry	Complete
OF-764	Dry Pond	1361 Bay Road	4/3/2023	Dry	Complete
OF-769	Town Pond	1154 Bay Road	4/3/2023	Dry	Initial Investigation Complete
OF-788	Brockton Reservoir	160 Larson Road	3/23/2023	Dry	Complete
OF-792	Cochato River	G2 Central Drive	4/27/2023	Dry	Complete
OF-801	Unnamed Tributary to Beaver Brook 6	3 Sumner Street	4/3/2023	Dry	Complete
OF-803	Unnamed Tributary	170 Eagle Rock Road	3/21/2023	Dry	Complete
OF-804	Unnamed Tributary	150 Eagle Rock Road	3/21/2023	Dry	Complete
OF-805	Unnamed Tributary	128 Eagle Rock Road	3/21/2023	Dry	Complete
OF-807	Unnamed Tributary	20 Dennison Court	4/10/2023	Flowing	Incomplete
OF-809	Beaver Brook	1140 Old Maple Street	4/4/2023	Dry	Complete
OF-812 (NEW)	Beaver Pond	1098 Turnpike Street	4/4/2023	Dry	Complete
OF-813 (NEW)	Beaver Pond	20 Maple Street	4/4/2023	Dry	Complete
OF-98	Unnamed Wetlands near Lovett Brook 1	146 Shuman Avenue	3/23/2023	Dry	Complete

TABLE 2

Stormwater Field Test Kit Results

Table 2: Stormwater Field Test Kit Results

Stoughton, MA

Outfall ID		OF-105			OF-109
Approximate Outfall Address		54-62 Campanelli Parkway		77 Campanelli Parkway	1-99 ; 2-98 O'Hare Circle
Discharge Waterbody		Lovett Brook			Unnamed Wetlands to Beaver Brook 2
Structure ID		SWMH-136-11:00 (Incoming line in the direction of 75 Campanelli Parkway)	SWMH-136-2:00 (Incoming line in the direction of 44 Campanelli Parkway)	SWMH-609 (Incoming line from Campanelli Parkway)	OF-109 (structure)
Date Sampled		3/23/2023	3/23/2023	3/23/2023	4/25/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.03**	**0.23**	**0.16**	0.00
Surfactants (mg/L)	0.25 mg/L	**1.50**	**1.50**	**1.00**	**0.25**
pH	6.5 - 8.0	6.21	6.05	6.33	6.25
Temperature (°C)	None	14.6	13.8	13.8	14.7
Specific Conductance (µS/cm)	2000 µS/cm	1,494.0	1,333.0	1,508.0	504.0

Outfall ID		OF-192	OF-207	OF-322	OF-350
Approximate Outfall Address		63 York Street	16 Overlook Road	7 McNamara Street	24 Dino Drive
Discharge Waterbody		Beaver Meadow Brook	Ames Long Pond	Woods Pond	Unnamed Tributary to Steep Hill Brook 2
Structure ID		SWMH-1832	SWMH (no asset ID) *	SWMH-309	SWMH -12-3:00 (incoming line from Morton Street)
Date Sampled		4/10/2023	4/25/2023	4/25/2023	4/25/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.19**	**0.90**	**0.08**	**0.04**
Surfactants (mg/L)	0.25 mg/L	**0.25**	**0.50**	**0.25**	**0.25**
pH	6.5 - 8.0	7.06	6.45	6.30	6.23
Temperature (°C)	None	10.2	11.4	15.2	15.5
Specific Conductance (µS/cm)	2000 µS/cm	693.0	744.0	634.0	422.0

Outfall ID		OF-378	OF-380		OF-399
Approximate Outfall Address		12 Highland Rock Drive	97 Holland Avenue	47 Holland Avenue	2399 Bay Road
Discharge Waterbody		Ames Long Pond	Unnamed Tributary to Dorchester Brook		Briggs Pond
Structure ID		OF-378 (outfall)	SWMH-291 (structure)	SWMH-349 (Incoming line in the direction of 44 Holland Avenue)	SWMH -547-3:00 (incoming line from Turnstone Terrace)
Date Sampled		3/31/2023	3/21/2023	4/4/2023	4/11/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.11**	**0.10**	0.00	**0.10**
Surfactants (mg/L)	0.25 mg/L	**0.25**	**0.25**	**2.00**	**1.00**
pH	6.5 - 8.0	6.04	6.84	7.44	6.81
Temperature (°C)	None	14.2	10.2	12.5	12.0
Specific Conductance (µS/cm)	2000 µS/cm	340.0	227.0	1,378.0	736.0

Red, bolded values exceed contaminant criteria

*: indicates new assets that were located during field investigations and do not have a Town assigned ID number

Table 2: Stormwater Field Test Kit Results

Stoughton, MA

Outfall ID		OF-453			
Approximate Outfall Address		128 Swanson Terrace			37 Farrington Street
Discharge Waterbody		Unnamed Tributary to Town Pond			
Structure ID		SMWH-203-10:00 (Incoming line from Swanson Terrace towards Farrington Street)	SMWH-203-1:00 (Incoming line from Swanson Terrace towards Dutton Road)	SMWH-203-2:00 (Incoming line from Swanson Terrace towards Dutton Road)	SWMH-267 (Incoming line from Farrington Street towards Plain Street)
Date Sampled		3/30/2023	3/30/2023	3/30/2023	3/30/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.25	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.06**	**0.20**	0.00	**0.07**
Surfactants (mg/L)	0.25 mg/L	**0.50**	**0.75**	**0.25**	**0.25**
pH	6.5 - 8.0	6.48	6.82	7.28	6.80
Temperature (°C)	None	11.3	11.9	12.2	10.6
Specific Conductance (µS/cm)	2000 µS/cm	141.1	451.0	368.0	127.8

Outfall ID		OF-458	OF-459		OF-54
Approximate Outfall Address		10 Flynn Road	4 Fraser Road		171 Atkinson Avenue
Discharge Waterbody		Unnamed Tributary to Beaver Brook 3			Dorchester Brook
Structure ID		SWMH-1721-2:00 (Incoming line from Flynn Road towards Green Drive)	SWMH-1718-2:00 (Incoming line from Green Street)	SWMH-1718-8:00 (Incoming line in the direction of 53 Green Street)	SWMH-20-10:00 (Incoming line in the direction of 72 Lelland Road)
Date Sampled		4/25/2023	4/25/2023	4/25/2023	4/3/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.07**	**0.06**	**0.06**	**0.18**
Surfactants (mg/L)	0.25 mg/L	**0.25**	**2.00**	**0.75**	**0.25**
pH	6.5 - 8.0	6.28	6.29	6.06	6.55
Temperature (°C)	None	14.6	14.3	14.2	13.2
Specific Conductance (µS/cm)	2000 µS/cm	319.0	830.0	849.0	270.0

Outfall ID		OF-54		OF-55	
Approximate Outfall Address		171 Atkinson Avenue	125 Atkinson Avenue	69 Atkinson Avenue	8 Atkinson Avenue
Discharge Waterbody		Dorchester Brook	Unnamed Tributary to Beaver Brook 3	Dorchester Brook	
Structure ID		SWMH-20-12:00 (Incoming line from Atkinson Avenue)	SWMH-23-9:00 (Incoming line from Atkinson Avenue)	SWMH-26-12:00 (Incoming line from Atkinson Avenue towards Fitzpatrick Street)	SWMH-31-12:00 (Incoming line from Atkinson Avenue towards Sumner Street)
Date Sampled		4/3/2023	4/3/2023	4/11/2023	4/11/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.06**	**0.04**	**0.24**	**0.15**
Surfactants (mg/L)	0.25 mg/L	**0.25**	**0.50**	**0.25**	**0.25**
pH	6.5 - 8.0	6.60	6.72	7.40	7.04
Temperature (°C)	None	12.6	11.6	12.5	13.7
Specific Conductance (µS/cm)	2000 µS/cm	406.0	425.0	98.8	95.1

Red, bolded values exceed contaminant criteria

Table 2: Stormwater Field Test Kit Results

Stoughton, MA

Outfall ID		OF-60	OF-792	OF-803	OF-807	OF-809
Approximate Outfall Address		30 Jeffrey Way	G2 Central Drive	150 Eagle Rock Road	22 Chase Run	1151 Turnpike Street
Discharge Waterbody		Unnamed Tributary near Woods Pond	Cochato River	Unnamed Tributary		
Structure ID		SWMH-307-10:00 (Incoming line from Jeffery Way towards Edward Kelleher Drive)	SWIN-2292-1:00 (Incoming line in the direction of 27 Golden Road)	SWMH-535 (structure)	SWIN-677 (structure)	SWIN-2589-3:00 Incoming line from the direction of 1101 Turnpike Street)
Date Sampled		3/30/2023	4/3/2023	4/11/2023	4/11/2023	3/30/2023
Field Test Parameter	**Threshold**					
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	**6.00**	0.0
Total Chlorine (mg/L)	Detectable	**0.02**	**0.08**	**0.09**	0.00	**0.14**
Surfactants (mg/L)	0.25 mg/L	**0.50**	**0.50**	**0.25**	**0.25**	**0.75**
pH	6.5 - 8.0	7.54	6.91	6.50	-**	7.14
Temperature (°C)	None	10.8	13.5	10.2	-**	11.6
Specific Conductance (µS/cm)	2000 µS/cm	689.0	1,639.0	461.0	-**	559.0

Red, bolded values exceed contaminant criteria

**: Due to the turbidity and the amount of floatables present in the sample, pH, temperature, SPC and total chlorine could not be measured. Surfactants is an approximate estimation.

TABLE 3

SVF Assessment

Table 3: Outfall-Catchment System Vulnerability Factor (SVF) Inventory
Stoughton, Massachusetts

			Required Factors								Recommended Factors		
Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	**SVF Identified**
OF-105	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-105A(NEW)	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-105B(NEW)	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-109	81 D Street	Unnamed Wetlands to Beaver Brook 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-112	180 Chase Run	Unnamed Tributary near Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-113	96 Daly Drive	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-192	63 York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-194	Intersection of Meadowbrook Lane and York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-195	Intersection of Meadowbrook Lane and York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-204	22 Palisades Circle	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-207	450 Highland Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-211	524 Highland Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-217	42 Ash Park Drive	Unnamed Tributary to Beaver Brook 6	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-243	261 William Kelley Road	Unnamed Wetlands to Beaver Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-251	52 Jordan Drive	Unnamed Tributary to Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-265(NEW)	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-300	76 Grace Lane	Plain Street Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-304	951 Pleasant Street	Unnamed Tributary To Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-322	166 Kotilk Street	Woods Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-323	98 Kotilk Street	Unnamed Tributary to Steep Hill Brook 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-330	100 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-331	100 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-342	10 Oliver Lane	Unnamed Tributary to Town Pond 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-350	24 Dino Drive	Unnamed Tributary to Steep Hill Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-354	301 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-355	301 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-356	301 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-357	501 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-358	501 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**

Table 3: Outfall-Catchment System Vulnerability Factor (SVF) Inventory
Stoughton, Massachusetts

Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	**SVF Identified**
OF-359	501 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-362	601 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-378	769 Highland Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-380	20 Smyth Street	Unnamed Tributary to Dorchester Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-399	30 Turnstone Terrace	Briggs Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-419	70 Drinkwater Avenue	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-453	129 Swanson Terrace	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-458	111 East Vanston Road	Unnamed Tributary to Beaver Brook 3	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-459	71 East Vanston Road	Unnamed Tributary to Beaver Brook 3	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-463	143 Crockett Street	Unnamed Tributary to Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-464	35 Crockett Street	Unnamed Tributary to Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-468	20 Turnstone Terrace	Briggs Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-478	215 Woodpecker Road	Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-492	1074 Turnpike Street	Unnamed Tributary To Beaver Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-516	3 Sumner Street	Unnamed Tributary to Beaver Brook 6	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-54	125 Atkinson Avenue	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-55	107 Atkinson Avenue	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-553	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553O-1 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-1 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-2 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-3 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-4 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-5 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-6 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-56	11 Daly Drive Extension	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-560(NEW)	144 West Street	Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-560S(NEW)	144 West Street	Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-57	1493 Morton Street	Unnamed Tributary to Dorchester Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-580	92 Tremont Street	Unnamed Tributary to Steep Hill Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-59	41 Jeffery Way	Unnamed Tributary near Woods Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-60	30 Jeffery Way	Unnamed Tributary near Woods Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-612	1749 Central Street	Unnamed Tributary (MA73-32)	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-616	1023 Turnpike Street	Beaver Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-64	1810 Central Street	Unnamed Tributary to Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-641	45 Kwedar Avenue	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-643	18 Fitzpatrick Street	Coweeset Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-65	1810 Central Street	Unnamed Tributary (MA73-32)	No	No	No	No	No	No	N/A	No	No	No	**NO**

Table 3: Outfall-Catchment System Vulnerability Factor (SVF) Inventory
Stoughton, Massachusetts

Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	**SVF Identified**
OF-653	33 Kwedar Avenue	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-669	951 Pleasant Street	Unnamed Tributary To Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-671	92 Tremont Street	Unnamed Tributary to Steep Hill Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-69	23 Plain Drive	Plain Street Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-694	951 Pleasant Street	Unnamed Tributary To Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-70	32 Kwedar Avenue	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-710	Intersection of Central Street and Old South Street	Unnamed Wetlands near Lovett Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-723	21 Plain Street	Unnamed Pond near Woods Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-735	358-366 Island Street	East Branch Neponset River	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-739	104 Page Street	Unnamed Pond near Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-742	1749 Central Street	Unnamed Tributary to Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-743	63 Central Street	Unnamed Wetlands near Lovett Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-744	63 Central Street	Unnamed Wetlands near Lovett Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-747	2050 Central Street	Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-748	2070 Central Street	Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-751	1027 Sumner Street	Coweeset Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-754	1050 Turnpike Street	Unnamed Tributary To Beaver Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-759	155 York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-764	1361 Bay Road	Dry Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-769	1154 Bay Road	Town Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-788	160 Larson Road	Brockton Reservoir	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-792	G2 Central Drive	Cochato River	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-801	3 Sumner Street	Unnamed Tributary to Beaver Brook 6	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-803	170 Eagle Rock Road	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-804	150 Eagle Rock Road	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-805	128 Eagle Rock Road	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-807	20 Dennison Court	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-809	1140 Old Maple Street	Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-812 (NEW)	1098 Turnpike Street	Unnamed Tributary to Beaver Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-813 (NEW)	20 Maple Street	Unnamed Tributary to Beaver Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-98	146 Shuman Avenue	Unnamed Wetlands near Lovett Brook 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**

Presence/Absence Evaluation Criteria:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
2. Common or twin-invert manholes serving storm and sanitary sewer alignments
3. Common trench construction serving both storm and sanitary sewer alignments
4. Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
5. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
6. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
7. Areas formerly served by combined sewer systems
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations
9. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs

OPTIONAL FACTORS

10. 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 that poor owner maintenance)
11. 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 that poor owner maintenance)

CATCHMENT INVESTIGATION PACKAGES

OF-463, SWMH-614

Created	2023-04-03 17:58:32 UTC by EPField 01
Updated	2023-04-03 18:03:11 UTC by EPField 01
Location	42.1103847, -71.0887436

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-614
Structure Type	Manhole
Outfall ID	OF-463
Date	2023-04-03
Time	13:58
Address	34 Ryan Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	54

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	51

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
General Notes	Manhole cover says SEWER
Surface Photos	
	

Interior Photos

OF-322, SWMH-309

Project	MVGP - 10/05 - Friday
Created	2023-04-10 16:06:15 UTC by EPField 01
Updated	2023-04-10 16:13:58 UTC by EPField 01
Location	42.1176053, -71.1160908

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-309
Structure Type	Manhole
Outfall ID	OF-322
Date	2023-04-10
Time	12:06
Address	7 McNamara Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	85

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	80

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	63
Pipe Notes	Flowing

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP

Pipe Diameter (inches)	12
Pipe Invert (inches)	58
Pipe Notes	Trickling, not enough to sample
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	11

Physical Indicators

Floatables	No
Odor	No

Pipe, 11

Sampling Location	Pipe
Pipe Clock Position	11

Field Kits

Temperature	59.4
pH	7.06
Specific Conductivity (SPC)	693
Surfactants	0.25
Chlorine	0.19
Ammonia	0
Surface Photos	

Interior Photos

OF-130, SWMH-547

Created	2023-03-21 17:06:59 UTC by EPField 01
Updated	2023-03-21 17:16:41 UTC by EPField 01
Location	42.0801152, -71.1394931

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-547
Structure Type	Manhole
Outfall ID	OF-130
Date	2023-03-21
Time	13:06
Address	2399 Bay Road Sharon, Massachusetts 02067

Structure Information

Maintenance Required	No
Manhole Invert (inches)	88

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	95

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	90

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

Pipes Submerged	Partially
Submerged Pipes	3:00 and 6:00
Flow Present	Yes
Flow Description	Trickle
Flow Source	3:00 pipe
Structure Notes	Chimney needs repair

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Temperature	53.6
pH	6.84
Specific Conductivity (SPC)	227
Surfactants	0.25
Chlorine	0.1
Ammonia	0
Sampling Notes	Sampled upstream drain manhole SWMH-547 3:00 incoming pipe

Surface Photos

Interior Photos

Other Photos

OF-NEW , SWMH-NEW

Created	2023-04-11 19:19:57 UTC by EPField 01
Updated	2023-04-11 19:22:31 UTC by EPField 01
Location	42.1269196, -71.1304136

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-NEW
Date	2023-04-11
Time	15:19
Address	144 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	65

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	63
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-653, SWMH-278

Project	MVGP - 10/05 - Friday
Created	2023-03-30 18:03:26 UTC by EPField 01
Updated	2023-03-30 18:06:58 UTC by EPField 01
Location	42.1120121, -71.1234045

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-278
Structure Type	Manhole
Outfall ID	OF-653
Date	2023-03-30
Time	14:06
Address	32 Kwedar Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	70

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	69

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	63

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	61

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	63
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-NEW, SCUPPER-NEW

Created	2023-04-27 19:09:28 UTC by EPField 01
Updated	2023-04-27 19:20:56 UTC by EPField 01
Location	42.0861413, -71.1176761

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SCUPPER-NEW
Structure Type	Outfall
Outfall ID	OF-NEW
Date	2023-04-27
Time	15:09
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Scupper; some debris found at the end of scupper

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-54, SWMH-376

Created	2023-04-03 19:44:14 UTC by EPField 01
Updated	2023-04-03 19:48:34 UTC by EPField 01
Location	42.1007049, -71.0914447

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-376
Structure Type	Manhole
Outfall ID	OF-54
Date	2023-04-03
Time	15:44
Address	55 Dean Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	94

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	94

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	77

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	78
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-350, SWMH-12

Project	MVGP - 10/05 - Friday
Created	2023-04-25 16:33:22 UTC by EPField 01
Updated	2023-04-25 16:47:46 UTC by EPField 01
Location	42.1176654, -71.1049318

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-12
Structure Type	Manhole
Outfall ID	OF-350
Date	2023-04-25
Time	12:33
Address	24 Dino Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	All pipes

Physical Indicators

Floatables	No
Odor	No

Pipe, 3

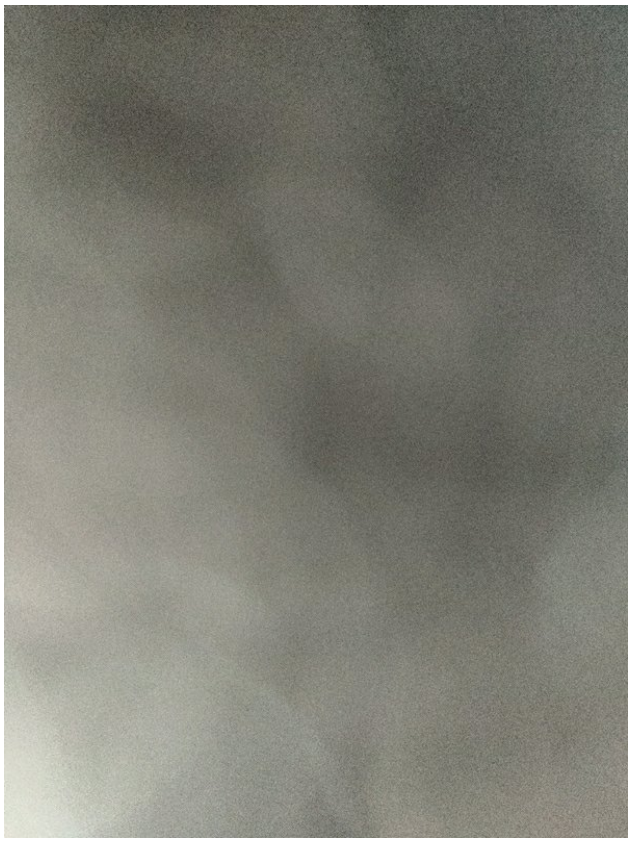
Sampling Location	Pipe
Pipe Clock Position	3

Field Kits

Temperature	59.9
pH	6.45
Specific Conductivity (SPC)	744
Surfactants	0.5
Chlorine	0.9
Ammonia	0
General Notes	Revisited catchment that was investigated last year to re-sample and found same large chlorine hit. Also, upstream manhole was dry, indicating that flow is entering system between 2 manholes. Same results as last year

Surface Photos

Interior Photos



OF-792, SWMH-2037

Created	2023-04-27 12:46:21 UTC by EPField 01
Updated	2023-04-27 12:48:31 UTC by EPField 01
Location	42.1595781, -71.0633783

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2037
Structure Type	Manhole
Outfall ID	OF-792
Date	2023-04-27
Time	08:46
Address	100 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Deposits observed, cleaning recommended.
Manhole Invert (inches)	56

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No

Odor	No
Surface Photos	 

Interior Photos

OF-516, SWMH-426

Created	2023-04-03 13:07:40 UTC by EPField 01
Updated	2023-04-03 13:10:40 UTC by EPField 01
Location	42.1151959, -71.0919748

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-426
Structure Type	Manhole
Outfall ID	OF-516
Date	2023-04-03
Time	09:07
Address	308 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	65

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	60

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	60

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-464, SWMH-75

Project	MVGP - 10/05 - Friday
Created	2023-03-31 19:19:56 UTC by EPField 01
Updated	2023-03-31 19:23:01 UTC by EPField 01
Location	42.107189, -71.0902173

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-75
Structure Type	Manhole
Outfall ID	OF-464
Date	2023-03-31
Time	15:20
Address	35 Crockett Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	41

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	36

7

Pipe Clock Position	7
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	35

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	35

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	36
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-380, SWMH-291

Project	MVGP - 10/05 - Friday
Created	2023-03-31 18:26:41 UTC by EPField 01
Updated	2023-03-31 18:38:31 UTC by EPField 01
Location	42.1084729, -71.1021648

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-291
Structure Type	Manhole
Outfall ID	OF-380
Date	2023-03-31
Time	14:26
Address	97 Holland Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	68

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	66

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65.5
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	3

Physical Indicators

Floatables	No
Odor	No

Pipe, 3

Sampling Location	Pipe
Pipe Clock Position	3

Field Kits

Temperature	50.4
pH	6.23
Specific Conductivity (SPC)	422
Surfactants	0.25
Chlorine	0.04
Ammonia	0
Surface Photos	

Interior Photos

OF-612, SWMH-NEW

Created	2023-04-11 18:36:49 UTC by EPField 01
Updated	2023-04-11 18:41:17 UTC by EPField 01
Location	42.1307611, -71.1289045

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-612
Date	2023-04-11
Time	14:36
Address	Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Clean sediment found at the bottom of structure
Manhole Invert (inches)	56

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Clay
Pipe Diameter (inches)	12
Pipe Invert (inches)	41

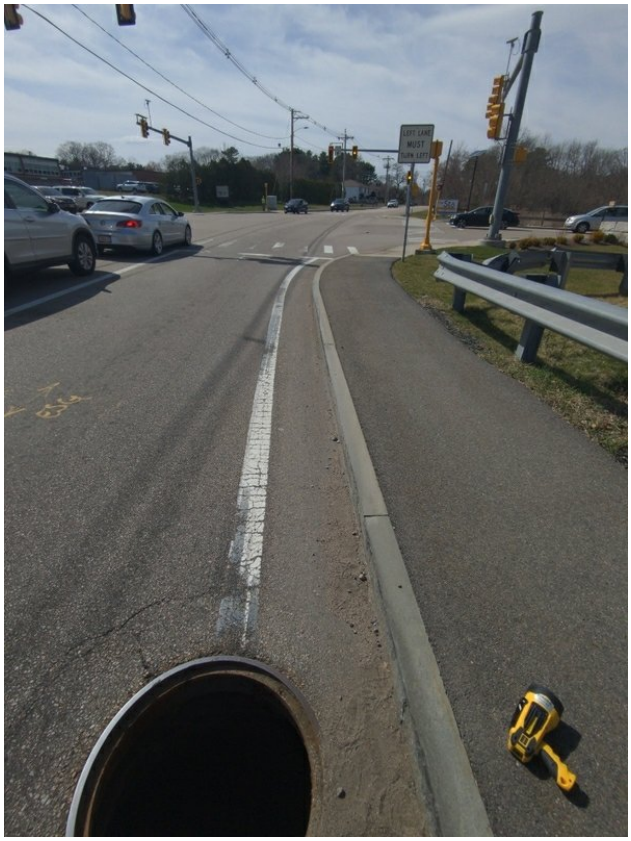
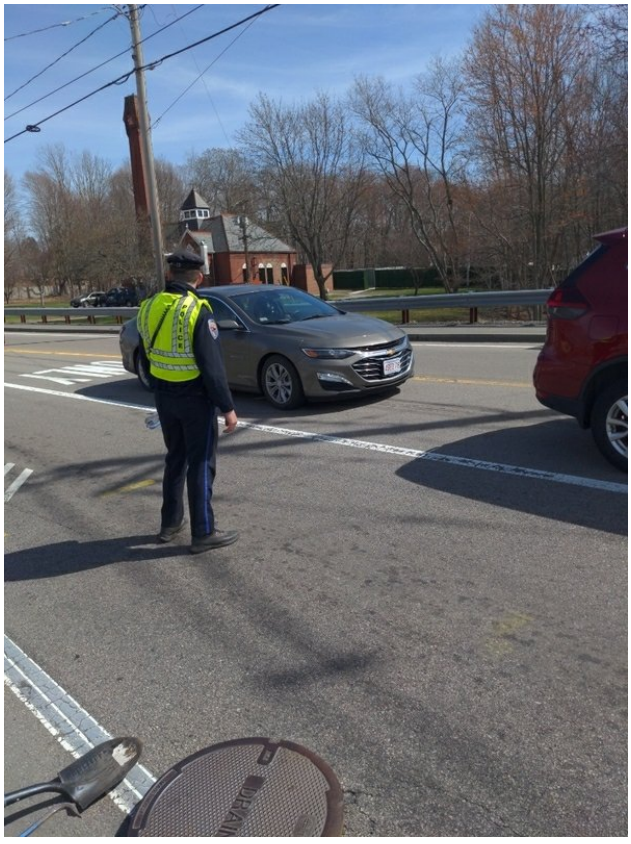
9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	39

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	10
Pipe Invert (inches)	51
Pipe Notes	Full of sediment
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure has sediment and standing water

Physical Indicators

Floatables	No
Odor	No
Surface Photos	
	

Interior Photos

Other Photos

OF-751, SWMH-758

Created	2023-04-11 16:00:44 UTC by EPField 01
Updated	2023-04-11 16:05:56 UTC by EPField 01
Location	42.0982587, -71.0803266

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-758
Structure Type	Manhole
Outfall ID	OF-751
Date	2023-04-11
Time	12:00
Address	987 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	84

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	28
Pipe Invert (inches)	84

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	60

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	65

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Substantial
Flow Source	Stream located upstream

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

New scupper , New

Project	MVGP - 10/05 - Friday
Created	2023-04-27 19:12:26 UTC by EPField 01
Updated	2023-04-27 19:13:15 UTC by EPField 01
Location	42.0860989, -71.1181136

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	New
Structure Type	Outfall
Outfall ID	New scupper
Date	2023-04-27
Time	15:12
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	erosion
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-207, SWMH-528

Created	2023-04-11 13:02:31 UTC by EPField 01
Updated	2023-04-11 15:17:28 UTC by EPField 01
Location	42.0890203, -71.1212016

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-528
Structure Type	Manhole
Outfall ID	OF-207
Date	2023-04-11
Time	09:02
Address	468 Highland Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	76

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	79

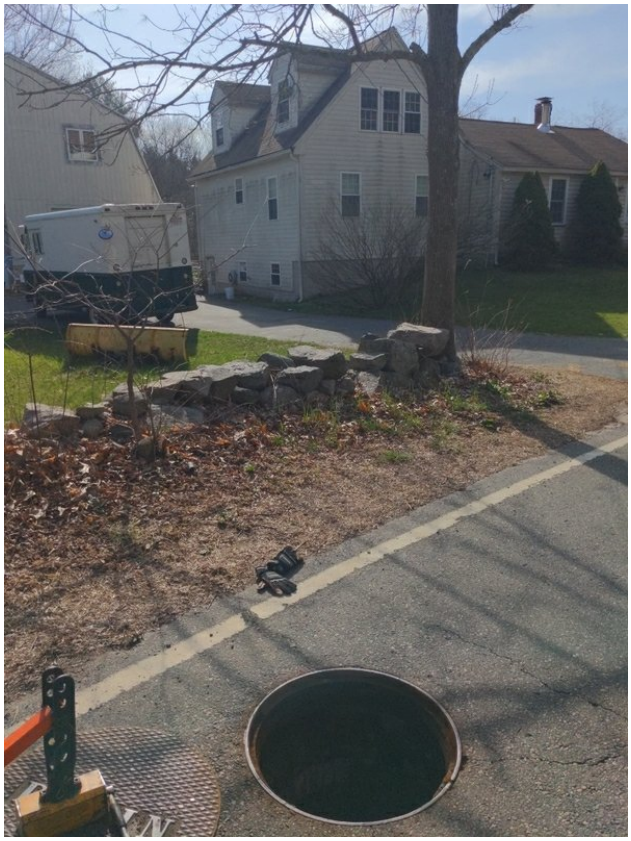
3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	79
Pipes Submerged	Partially
Submerged Pipes	6:00 and 3:00
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos



Interior Photos

OF-357, SWMH-2030

Created	2023-04-10 13:41:55 UTC by EPField 01
Updated	2023-04-10 13:46:16 UTC by EPField 01
Location	42.1531065, -71.0655836

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2030
Structure Type	Manhole
Outfall ID	OF-357
Date	2023-04-10
Time	09:41
Address	501 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	72

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	72

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	71
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

General Notes	Located on the island next to Kohl's

Surface Photos

Interior Photos

OF-769, SWMH-675

Project	MVGP - 10/05 - Friday
Created	2023-04-03 14:58:43 UTC by EPField 01
Updated	2023-04-03 15:01:51 UTC by EPField 01
Location	42.110729, -71.1335486

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-675
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	10:59
Address	1177 Bay Road Sharon, Massachusetts 02067

Structure Information

Maintenance Required	No
Manhole Invert (inches)	66

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	65

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	67

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	33

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	56

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	34

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	34
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-478, SWMH-1061

Project	MVGP - 10/05 - Friday
Created	2023-03-21 13:41:29 UTC by EPField 01
Updated	2023-03-21 13:56:39 UTC by EPField 01
Location	42.1253756, -71.1310617

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1061
Structure Type	Manhole
Outfall ID	OF-478
Date	2023-03-21
Time	09:41
Address	215 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	58

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52
Pipes Submerged	No
Flow Present	No
Structure Notes	Conical offset with debris on offset

Physical Indicators

Floatables	No

Odor	No
General Notes	Outfall is covered in vegetation. It appears to not receive a lot of flow. The 2 upstream catch basins were not visible and likely are clogged
Surface Photos	
Interior Photos	

Other Photos

OF-304, SWMH-NEW

Created	2023-04-04 14:21:46 UTC by EPField 01
Updated	2023-04-04 14:24:42 UTC by EPField 01
Location	42.1429054, -71.0770896

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-304
Date	2023-04-04
Time	10:21
Address	970 Pleasant Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	53

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	53

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	53
Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	No
Structure Notes	Standing water is present

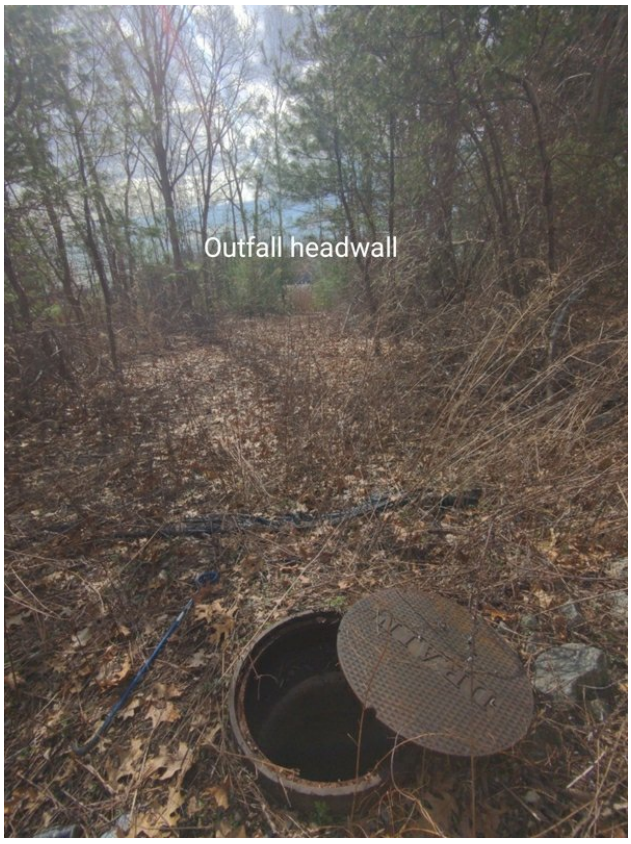
Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos



OF-195, SWMH-1492

Created	2023-04-04 12:29:03 UTC by EPField 01
Updated	2023-04-04 12:35:45 UTC by EPField 01
Location	42.1428305, -71.0996768

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1492
Structure Type	Manhole
Outfall ID	OF-195
Date	2023-04-04
Time	08:29
Address	103 York Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	60

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56
Pipes Submerged	Partially
Submerged Pipes	6:00
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
General Notes	Culvert has a flow meter. Flow was seen coming from 103 York St from a 2" PVC pipe and entering Beaver Meadow Brook.

Surface Photos

Interior Photos

Other Photos

OF-464, SWMH-67

Project	MVGP - 10/05 - Friday
Created	2023-03-31 19:32:26 UTC by EPField 01
Updated	2023-04-25 21:08:15 UTC by EPField 01
Location	42.1082727, -71.0891266

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-67
Structure Type	Manhole
Outfall ID	OF-464
Date	2023-03-31
Time	15:32
Address	76 Macarthur Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	73

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66.5

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	60

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	54
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

new CB on 69 Macarthur

OF-331, SWMH-2033

Created	2023-04-10 12:51:54 UTC by EPField 01
Updated	2023-04-10 13:02:30 UTC by EPField 01
Location	42.1577371, -71.0636606

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2033
Structure Type	Manhole
Outfall ID	OF-331
Date	2023-04-10
Time	08:51
Address	400 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	64

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	69

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry and full of sediment.

Physical Indicators

Floatables	No
Odor	No
General Notes	Verify with Town who owns BMP in parking lot. SWMH located in island, across the street from parking lot, appears to connect to BMP.
Surface Photos	

Interior Photos

Other Photos


SWMH-2033

OF-57, SWIN-NEW

Created	2023-04-11 20:33:22 UTC by EPField 01
Updated	2023-04-11 20:36:32 UTC by EPField 01
Location	42.1055836, -71.0994351

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-NEW
Structure Type	Catch Basin
Outfall ID	OF-57
Date	2023-04-11
Time	16:33
Address	701 Morton Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	60

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54
Pipe Notes	Capped

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	54
Pipe Notes	Capped
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry. 11:00 and 1:00 pipes are capped.

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-NEW , SCUPPER-NEW

Created	2023-04-27 19:17:06 UTC by EPField 01
Updated	2023-04-27 19:17:59 UTC by EPField 01
Location	42.08658, -71.1174129

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SCUPPER-NEW
Structure Type	Outfall
Outfall ID	OF-NEW
Date	2023-04-27
Time	15:17
Address	1782 West Street Stoughton, Massachusetts 02072

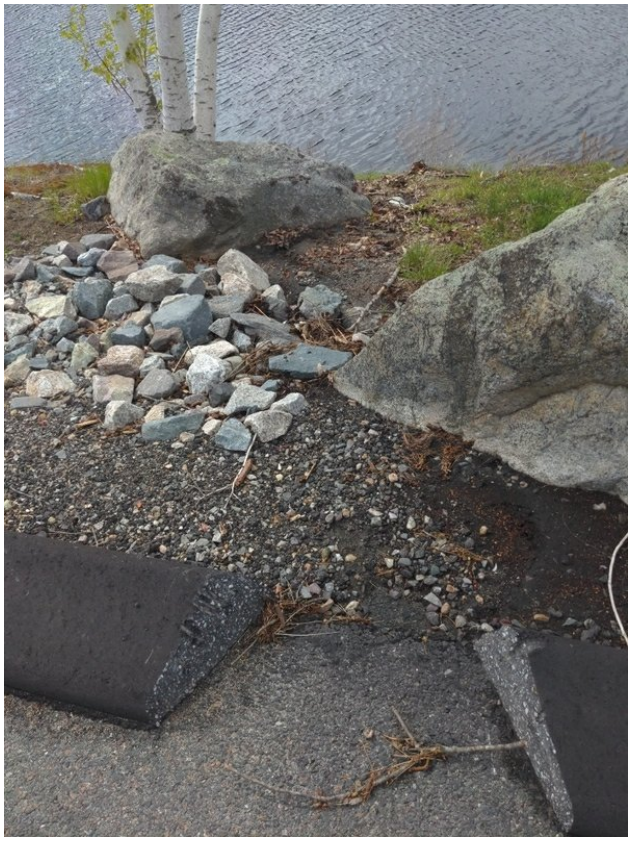
Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Scupper

Physical Indicators

Floatables	No
Odor	No

Surface Photos



Interior Photos

OF-769, SWMH-2308

Project	MVGP - 10/05 - Friday
Created	2023-04-03 14:49:24 UTC by EPField 01
Updated	2023-04-03 14:52:51 UTC by EPField 01
Location	42.1108333, -71.1334853

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2308
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	10:49
Address	6 Polillio Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	97

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	99

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	97

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	95
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-113, SWMH-29

Project	MVGP - 10/05 - Friday
Created	2023-04-03 19:58:02 UTC by EPField 01
Updated	2023-04-03 20:03:08 UTC by EPField 01
Location	42.1017598, -71.0845124

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-29
Structure Type	Manhole
Outfall ID	OF-113
Date	2023-04-03
Time	15:58
Address	96 Daly Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	50

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	42

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	41

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	41
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

New, SWMH-893

Created	2023-04-27 17:11:18 UTC by EPField 01
Updated	2023-04-27 17:55:46 UTC by EPField 01
Location	42.1339654, -71.1412936

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-893
Structure Type	Manhole
Outfall ID	New
Date	2023-04-27
Time	13:11
Address	Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	49

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	31
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

General Notes	Trench drain discharges into manhole
Surface Photos	 

Interior Photos

Other Photos

OF-55, SWMH-440

Created	2023-04-11 15:04:34 UTC by EPField 01
Updated	2023-04-11 15:09:19 UTC by EPField 01
Location	42.1036741, -71.0814326

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-440
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	11:04
Address	907 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	87

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	88

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	88

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
Surface Photos	 

Interior Photos

OF-204, SWMH-264

Created	2023-04-27 19:46:05 UTC by EPField 01
Updated	2023-04-27 19:48:57 UTC by EPField 01
Location	42.0854689, -71.1151966

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-264
Structure Type	Manhole
Outfall ID	OF-204
Date	2023-04-27
Time	15:46
Address	22 Palisades Circle Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	68

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	71

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
General Notes	Could not open during the FY22 catchment investigations. Successfully opened during FY23 catchment investigations.
Surface Photos	

Interior Photos

OF-NEW, SWMH-2267

Created	2023-04-04 15:20:46 UTC by EPField 01
Updated	2023-04-04 15:24:24 UTC by EPField 01
Location	42.1429008, -71.0767026

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2267
Structure Type	Manhole
Outfall ID	OF-NEW
Date	2023-04-04
Time	11:20
Address	20 Maple Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	36

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	38

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	15
Pipe Invert (inches)	36
Pipes Submerged	Partially
Submerged Pipes	6:00 and 11:00
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
General Notes	Manhole cover says SEWER

Surface Photos


SEWER

Interior Photos

Other Photos

OF-801, SWMH-65

Created	2023-04-03 13:54:50 UTC by EPField 01
Updated	2023-04-03 13:57:20 UTC by EPField 01
Location	42.1113366, -71.0881454

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-65
Structure Type	Manhole
Outfall ID	OF-801
Date	2023-04-03
Time	09:54
Address	11 Ryan Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	64

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-769, New

Project	MVGP - 10/05 - Friday
Created	2023-04-03 15:40:29 UTC by EPField 01
Updated	2023-04-03 15:43:08 UTC by EPField 01
Location	42.111432, -71.1339148

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	New
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	11:40
Address	1143 Bay Road Sharon, Massachusetts 02067

Structure Information

Maintenance Required	No
Manhole Invert (inches)	41

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	37

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	24

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	40
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-55, SWMH-741

Created	2023-04-11 16:59:46 UTC by EPField 01
Updated	2023-04-11 17:02:19 UTC by EPField 01
Location	42.1055809, -71.0820792

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-741
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	12:59
Address	741 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	55

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56
Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Substantial
Flow Source	Culverted stream located upstream

Physical Indicators

Floatables	No
Odor	No
Surface Photos	 

Interior Photos

OF-380, SWMH-292

Created	2023-03-31 18:49:17 UTC by EPField 01
Updated	2023-03-31 18:52:38 UTC by EPField 01
Location	42.1088175, -71.1023253

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-292
Structure Type	Manhole
Outfall ID	OF-380
Date	2023-03-31
Time	14:49
Address	78 Holland Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	98

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	97

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	96

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	94
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	9 and 3 incoming pipes
Structure Notes	Sampled both incoming pipes at respective upstream structures

Physical Indicators

Floatables	No
Odor	No
Surface Photos	
Interior Photos	

OF-803, SWMH-535

Project	MVGP - 10/05 - Friday
Created	2023-03-21 18:14:09 UTC by EPField 01
Updated	2023-03-21 18:46:10 UTC by EPField 01
Location	42.0769087, -71.1321659

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-535
Structure Type	Manhole
Outfall ID	OF-803
Date	2023-03-21
Time	14:14
Address	150 Eagle Rock Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	45

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	43

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	HDPE
Pipe Diameter (inches)	18
Pipe Invert (inches)	42
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	Inlet

Physical Indicators

Floatables	Yes
Floatables Type	oil sheen
Odor	No

Structure

Sampling Location	Structure

Field Kits

Temperature	50.4
pH	6.5
Specific Conductivity (SPC)	461
Surfactants	0.25
Chlorine	0.09
Ammonia	0

Surface Photos

Interior Photos

OF-458, SWMH-1721

Project	MVGP - 10/05 - Friday
Created	2023-04-25 19:04:28 UTC by EPField 01
Updated	2023-04-25 19:06:56 UTC by EPField 01
Location	42.1247394, -71.0772045

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1721
Structure Type	Manhole
Outfall ID	OF-458
Date	2023-04-25
Time	15:04
Address	10 Flynn Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	Yes
Flow Description	Substantial
Flow Source	12

Physical Indicators

Floatables	No
Odor	No

Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	58.3
pH	6.28
Specific Conductivity (SPC)	319
Surfactants	0.25
Chlorine	0.07
Ammonia	0
General Notes	Revisited catchment to re-sample structure with hit last year.

Surface Photos

Interior Photos

OF-356, SWMH-2031

Created	2023-04-04 13:37:20 UTC by EPField 01
Updated	2023-04-04 13:45:51 UTC by EPField 01
Location	42.1555286, -71.0655191

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2031
Structure Type	Manhole
Outfall ID	OF-356
Date	2023-04-04
Time	09:37
Address	301 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	66

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	62

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	66

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59

Pipes Submerged	No
Flow Present	No
Structure Notes	Large deposits in structure.

Physical Indicators

Floatables	No
Odor	No
Surface Photos	 

Interior Photos

Other Photos

OF-NEW , SWMH-958

Created	2023-04-27 17:44:22 UTC by EPField 01
Updated	2023-04-27 17:50:13 UTC by EPField 01
Location	42.1338364, -71.1394999

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-958
Structure Type	Manhole
Outfall ID	OF-NEW
Date	2023-04-27
Time	13:44
Address	Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	72

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	48
Pipe Invert (inches)	70

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	48
Pipe Invert (inches)	70

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	43

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	12
Pipe Invert (inches)	51

Pipes Submerged	Partially
Submerged Pipes	12:00 and 6:00
Flow Present	Yes
Flow Description	Substantial
Flow Source	Culverted stream located in the structure
Structure Notes	Outfall is located in the structure

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-769, SWMH-243

Created	2023-03-31 15:25:07 UTC by EPField 01
Updated	2023-03-31 15:28:58 UTC by EPField 01
Location	42.1107403, -71.1319225

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-243
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-03-31
Time	11:25
Address	49 Polillio Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	145

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	144

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	82

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	140

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-192, SWMH-1832

Created	2023-04-04 12:40:33 UTC by EPField 01
Updated	2023-04-04 13:04:52 UTC by EPField 01
Location	42.1424223, -71.1011805

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1832
Structure Type	Manhole
Outfall ID	OF-192
Date	2023-04-04
Time	08:40
Address	63 York Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning is recommended due to severe debris build up
Manhole Invert (inches)	44

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	56

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	43

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	44
Pipes Submerged	Partially
Submerged Pipes	6:00 and 2:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	2:00

Physical Indicators

Floatables	No
Odor	No

Pipe, 2

Sampling Location	Pipe
Pipe Clock Position	2

Field Kits

Temperature	50.4
pH	7.44
Specific Conductivity (SPC)	1378
Surfactants	2
Chlorine	0
Ammonia	0
General Notes	Outfall is located within 100' of a wetland. To be considered as a new MS4 outfall. Outlets are located behind the pump station and are directly flowing into the catch basins and catchment.

Surface Photos

Interior Photos

Other Photos


OF-192

OF-105, SWMH-609

Created	2023-03-23 17:41:13 UTC by EPField 01
Updated	2023-03-23 17:55:35 UTC by EPField 01
Location	42.11193328460672, -71.06823415111401

Background Data

Client	Town of Stoughton
EP Representatives	Mike Franck, Annie Tucker
Structure ID	SWMH-609
Structure Type	Manhole
Outfall ID	OF-105
Date	2023-03-23
Time	13:41
Address	77 Campanelli Pkwy Stoughton, MA 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	100

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	98

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	95.5
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	6

Physical Indicators

Floatables	No
Odor	No

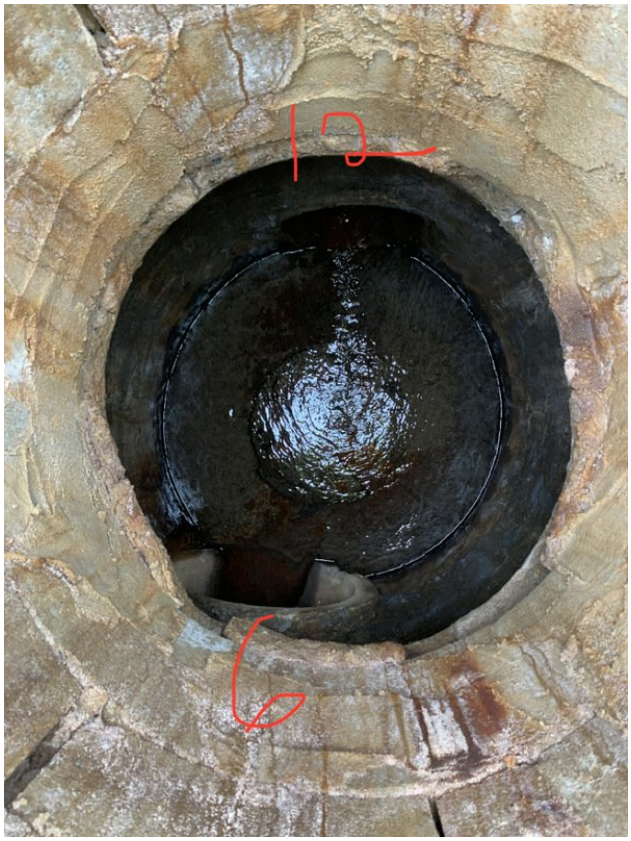
Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	56.8
pH	6.33
Specific Conductivity (SPC)	1508
Surfactants	1
Chlorine	0.16
Ammonia	0
Surface Photos	

Interior Photos



OF-NEW, SCUPPER-NEW

Created	2023-04-27 19:11:37 UTC by EPField 01
Updated	2023-04-27 19:21:53 UTC by EPField 01
Location	42.0860328, -71.1180976

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SCUPPER-NEW
Structure Type	Outfall
Outfall ID	OF-NEW
Date	2023-04-27
Time	15:11
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Scupper

Physical Indicators

Floatables	No
Odor	No
General Notes	Some vegetation located at the end of scupper

Surface Photos

Interior Photos

OUTLET-NEW , OUTLET-NEW

Created	2023-04-27 19:23:55 UTC by EPField 01
Updated	2023-04-27 19:26:23 UTC by EPField 01
Location	42.0861861, -71.1175806

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	OUTLET-NEW
Structure Type	Outlet
Outfall ID	OUTLET-NEW
Date	2023-04-27
Time	15:23
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	18
Pipe Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure looks relatively new but does not show any signs of recent flow. Vegetation growth is observed in the pipe

Physical Indicators

Floatables	No
Odor	No
General Notes	Could not locate any upstream structures or inlet draining into outlet.

Surface Photos

Interior Photos

OF-54, SWMH-20

Project	MVGP - 10/05 - Friday
Created	2023-04-03 18:59:42 UTC by EPField 01
Updated	2023-04-03 19:20:20 UTC by EPField 01
Location	42.1028242, -71.0878071

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-20
Structure Type	Manhole
Outfall ID	OF-54
Date	2023-04-03
Time	14:59
Address	171 Atkinson Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	84

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	85

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	83

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	10
Pipe Invert (inches)	75

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	82
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	10, 12

Physical Indicators

Floatables	No
Odor	No

Pipe, 10

Sampling Location	Pipe
Pipe Clock Position	10

Field Kits

Temperature	55.8
pH	6.55
Specific Conductivity (SPC)	270
Surfactants	0.25
Chlorine	0.18
Ammonia	0

Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	54.7
pH	6.6
Specific Conductivity (SPC)	406
Surfactants	0.25
Chlorine	0.06
Ammonia	0

Surface Photos

Interior Photos

OF-769, New

Project	MVGP - 10/05 - Friday
Created	2023-04-03 15:03:27 UTC by EPField 01
Updated	2023-04-03 15:06:15 UTC by EPField 01
Location	42.1107482, -71.1335827

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	New
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	11:03
Address	1177 Bay Road Sharon, Massachusetts 02067

Structure Information

Maintenance Required	No
Manhole Invert (inches)	33

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	38

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	35
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-65, SWMH-1234

Created	2023-04-25 13:19:35 UTC by EPField 01
Updated	2023-04-27 15:24:48 UTC by EPField 01
Location	42.1306983, -71.1312456

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1234
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-25
Time	09:19
Address	1818 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	129

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	129
Pipe Notes	Outlet is filled with leaves

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	128

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	105

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	8

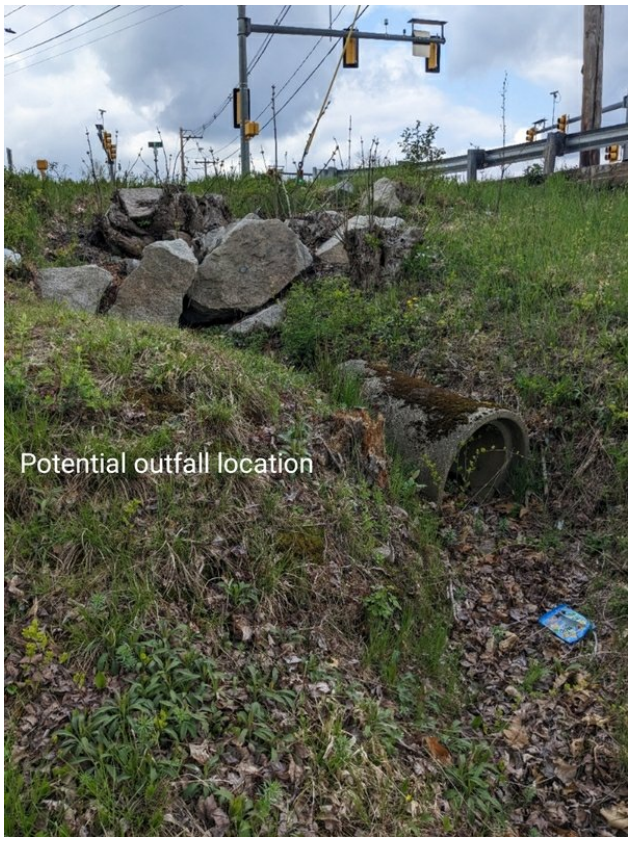
Pipe Invert (inches)	52
Pipes Submerged	No
Flow Present	No
Structure Notes	6:00 is filled with leaves

Physical Indicators

Floatables	No
Odor	No
General Notes	Confirm with Town the connectivity of cleanout located upstream of manhole. The cleanout is in line with the 9:00 pipe found in SWMH-1234.
Surface Photos	

Interior Photos

Other Photos


Potential outfall location

OF-739, SWMH-2009

Created	2023-04-27 13:28:58 UTC by EPField 01
Updated	2023-04-27 13:40:30 UTC by EPField 01
Location	42.1434405, -71.0652876

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2009
Structure Type	Manhole
Outfall ID	OF-739
Date	2023-04-27
Time	09:28
Address	104 Page Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning. Floatables observed
Manhole Invert (inches)	64

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	62
Pipe Notes	Sediment at the bottom of the pipe

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	42

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	60
Pipe Notes	Sediment at the bottom of the pipe
Pipes Submerged	Fully
Flow Present	No
Structure Notes	12:00 and 6:00 pipes are fully submerged. Standing water is present

Physical Indicators

Floatables	Yes
Floatables Type	Trash
Floatables Note	Trash should be removed. Possibly coming from catch basin located upstream. 12:00 incoming pipe is mapped but does not have an asset connected to it. Verify connectivity with Town if SWIN-3195 connects to manhole and if it is the 12:00 incoming connection. Could not locate 9:00 connection that is mapped on GIS.
Odor	No
Surface Photos	

Interior Photos

OF-109, OF-109

Project	MVGP - 10/05 - Friday
Created	2023-04-25 18:36:18 UTC by EPField 01
Updated	2023-04-25 18:39:55 UTC by EPField 01
Location	42.1209039, -71.0764712

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	OF-109
Structure Type	Outfall
Outfall ID	OF-109
Date	2023-04-25
Time	14:36
Address	1-99 ; 2-98 O'Hare Circle Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	O'Hare Circle

Physical Indicators

Floatables	No
Odor	No

Structure

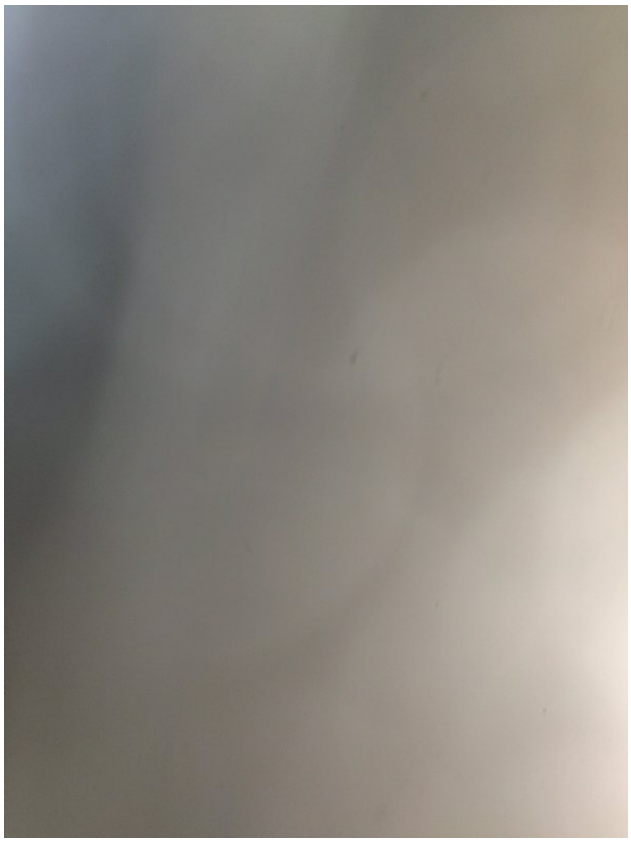
Sampling Location	Structure

Field Kits

Temperature	58.5
pH	6.25
Specific Conductivity (SPC)	504
Surfactants	0.25
Chlorine	0
Ammonia	0
General Notes	Unable to sample at upstream structure because MH is mostly covered by dirt and roots. EP opened structure enough to verify connectivity and determine that flow is coming from O'Hare Circle. Unable to locate MH at end of O'Hare Circle.

Surface Photos

Interior Photos



OF-459, SWMH-1718

Project	MVGP - 10/05 - Friday
Created	2023-04-25 19:11:34 UTC by EPField 01
Updated	2023-04-27 13:28:37 UTC by EPField 01
Location	42.1255112, -71.0763449

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1718
Structure Type	Manhole
Outfall ID	OF-459
Date	2023-04-25
Time	15:11
Address	4 Fraser Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	8, 2

Physical Indicators

Floatables	No
Odor	No

Pipe, 2

Sampling Location	Pipe
Pipe Clock Position	2

Field Kits

Temperature	57.7
pH	6.29
Specific Conductivity (SPC)	830
Surfactants	2
Chlorine	0.06
Ammonia	0

Pipe, 8

Sampling Location	Pipe
Pipe Clock Position	8

Field Kits

Temperature	576

pH	6.06
Specific Conductivity (SPC)	849
Surfactants	0.75
Chlorine	0.06
Ammonia	0
General Notes	Resampled structure that had hit last year
Surface Photos	

Interior Photos

OF-769, SWMH-678

Created	2023-03-31 14:42:31 UTC by EPField 01
Updated	2023-03-31 14:48:53 UTC by EPField 01
Location	42.1089142, -71.1302354

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-678
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-03-31
Time	10:42
Address	64 Pinetree Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	43

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	44

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	43
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

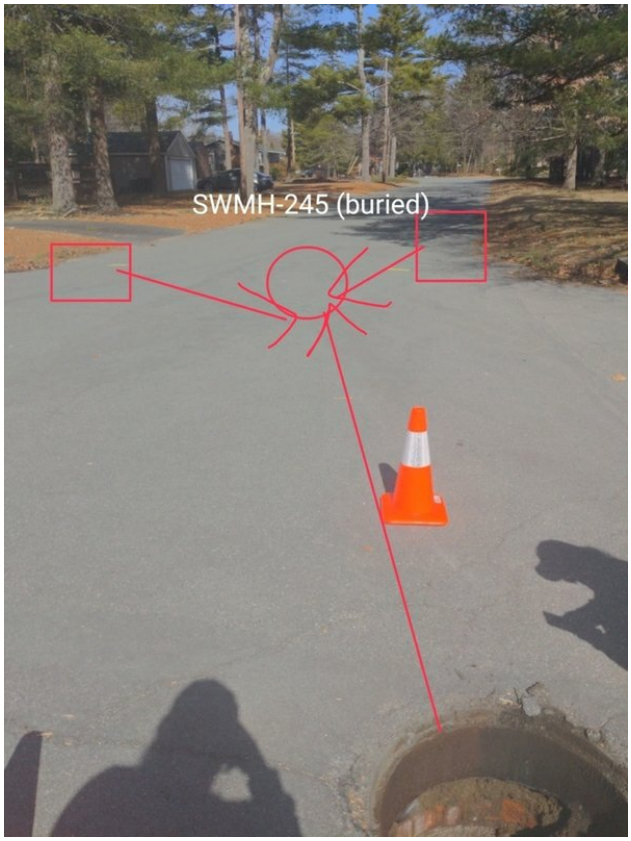
Physical Indicators

Floatables	No
Odor	No
General Notes	SWMH-245 is buried and is downstream of SWMH-678. Mapping has been updated to reflect the correct pipe connectivity.

Surface Photos

Interior Photos

Other Photos



OF-468, SWMH-548

Project	MVGP - 10/05 - Friday
Created	2023-03-21 15:29:08 UTC by EPField 01
Updated	2023-03-21 15:33:25 UTC by EPField 01
Location	42.0797391, -71.1393126

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-548
Structure Type	Manhole
Outfall ID	OF-468
Date	2023-03-21
Time	11:29
Address	20 Turnstone Terrace Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	54.5

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-54, SWMH-23

Created	2023-04-03 18:28:53 UTC by EPField 01
Updated	2023-04-03 18:39:22 UTC by EPField 01
Location	42.1032717, -71.085924

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-23
Structure Type	Manhole
Outfall ID	OF-54
Date	2023-04-03
Time	14:28
Address	125 Atkinson Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	92

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	36
Pipe Invert (inches)	93

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	92
Pipes Submerged	Partially
Submerged Pipes	6:00 and 9:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	9:00 incoming pipe

Physical Indicators

Floatables	No
Odor	No

Pipe, 9

Sampling Location	Pipe
Pipe Clock Position	9

Field Kits

Temperature	52.9
pH	6.72
Specific Conductivity (SPC)	425
Surfactants	0.5
Chlorine	0.04
Ammonia	0
Surface Photos	

Interior Photos

Other Photos

OF-769, SWMH-2312

Project	MVGP - 10/05 - Friday
Created	2023-04-03 16:14:10 UTC by EPField 01
Updated	2023-04-03 16:16:31 UTC by EPField 01
Location	42.1117324, -71.1340042

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2312
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	12:14
Address	1154 Bay Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	109

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	113

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	114

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	109
Pipe Notes	INTERCONNECTION
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No

Odor	No
Surface Photos	
	

Interior Photos

OF-764, SWMH-693

Project	MVGP - 10/05 - Friday
Created	2023-04-03 14:14:15 UTC by EPField 01
Updated	2023-04-03 14:26:35 UTC by EPField 01
Location	42.1065123, -71.1319194

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-693
Structure Type	Catch Basin
Outfall ID	OF-764
Date	2023-04-03
Time	10:14
Address	1347 Bay Road Sharon, Massachusetts 02067

Structure Information

Maintenance Required	No
Manhole Invert (inches)	63

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	36

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	4
Pipe Invert (inches)	31
Pipe Notes	BLOCKED OFF

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	4
Pipe Invert (inches)	30
Pipe Notes	BLOCKED OFF
Pipes Submerged	Fully
Flow Present	No
Structure Notes	Unable to locate and verify outlet

Physical Indicators

Floatables	No
Odor	No
General Notes	GIS identifies structure as MH but it's a catch basin
Surface Photos	
Interior Photos	

OF-742, SWIN-1799

Created	2023-04-11 18:44:45 UTC by EPField 01
Updated	2023-04-11 18:51:49 UTC by EPField 01
Location	42.1306431, -71.1293344

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-1799
Structure Type	Catch Basin
Outfall ID	OF-742
Date	2023-04-11
Time	14:44
Address	Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning of debris seen at the bottom of structure
Manhole Invert (inches)	70

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Clay
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	12
Pipe Invert (inches)	56
Pipe Notes	Capped
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-671, SWMH-516

Created	2023-04-25 14:45:19 UTC by EPField 01
Updated	2023-04-25 14:47:45 UTC by EPField 01
Location	42.1164133, -71.1073321

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-516
Structure Type	Manhole
Outfall ID	OF-671
Date	2023-04-25
Time	10:45
Address	235 Morton Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	71

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	69

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	69

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

Pipes Submerged	No
Flow Present	No
Structure Notes	3:00 incoming pipe does not exist

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-322, SWMH-326

Created	2023-04-10 16:46:05 UTC by EPField 01
Updated	2023-04-10 17:14:32 UTC by EPField 01
Location	42.1174873, -71.1195194

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-326
Structure Type	Manhole
Outfall ID	OF-322
Date	2023-04-10
Time	12:46
Address	226 Poskus Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	46

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	47

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	46

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	46
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	1:00
Structure Notes	Trickling; not enough to sample

Physical Indicators

Floatables	No
Odor	No
General Notes	Could not locate the source of the trickling flow from the upstream catch basin. Recommend replacing frame and cover. Severe rust is observed.
Surface Photos	
	

Interior Photos

OF-453, New

Project	MVGP - 10/05 - Friday
Created	2023-03-30 15:53:09 UTC by EPField 01
Updated	2023-03-30 15:56:44 UTC by EPField 01
Location	42.112206, -71.1190734

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	New
Structure Type	Manhole
Outfall ID	OF-453
Date	2023-03-30
Time	11:53
Address	116 Swanson Terrace Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	66

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	11

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-792, SWMH-NEW

Created	2023-04-27 12:34:33 UTC by EPField 01
Updated	2023-04-27 12:43:09 UTC by EPField 01
Location	42.1604554, -71.0635531

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-792
Date	2023-04-27
Time	08:34
Address	G2 Central Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	67

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45
Pipes Submerged	No
Flow Present	No
Structure Notes	Manhole located in island. Recommend GPSing

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-671, SWMH-513

Created	2023-04-25 14:52:14 UTC by EPField 01
Updated	2023-04-25 14:56:12 UTC by EPField 01
Location	42.1176367, -71.1071741

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-513
Structure Type	Manhole
Outfall ID	OF-671
Date	2023-04-25
Time	10:52
Address	235 Morton Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	70

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	71

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	70

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	69

Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-769, SWMH-246

Project	MVGP - 10/05 - Friday
Created	2023-04-03 14:39:17 UTC by EPField 01
Updated	2023-04-03 14:42:41 UTC by EPField 01
Location	42.1108067, -71.1334078

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-246
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	10:39
Address	6 Polillio Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	57

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	60

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	43

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	53

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	55

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	57
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-694, SWMH-1798

Created	2023-04-04 16:58:28 UTC by EPField 01
Updated	2023-04-04 17:01:02 UTC by EPField 01
Location	42.1418699, -71.0766031

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1798
Structure Type	Manhole
Outfall ID	OF-694
Date	2023-04-04
Time	12:58
Address	1196 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	54

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	53

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	52
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-65, SWMH-NEW

Created	2023-04-27 15:10:35 UTC by EPField 01
Updated	2023-04-27 15:20:40 UTC by EPField 01
Location	42.1300581, -71.1302557

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-27
Time	11:10
Address	26 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning; deposits observed
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	50
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

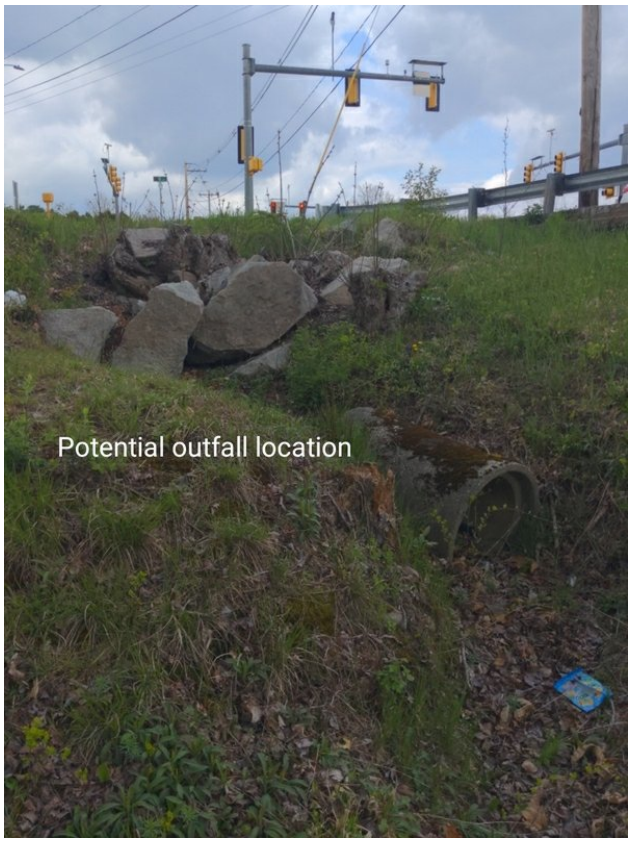
Physical Indicators

Floatables	No

Odor	No
Surface Photos	 

Interior Photos

Other Photos



OF-342, SWMH-735

Project	MVGP - 10/05 - Friday
Created	2023-03-30 19:25:49 UTC by EPField 01
Updated	2023-03-30 19:38:55 UTC by EPField 01
Location	42.1052027, -71.1199484

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-735
Structure Type	Manhole
Outfall ID	OF-342
Date	2023-03-30
Time	15:25
Address	10 Oliver Lane Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	104

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	106

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	106
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	Unknown

Physical Indicators

Floatables	No
Odor	No
General Notes	Stormceptor
Surface Photos	
Interior Photos	

Other Photos

Outfall

OF-807, SWIN-677

Created	2023-04-25 17:14:59 UTC by EPField 01
Updated	2023-04-25 17:24:25 UTC by EPField 01
Location	42.1037984, -71.080185

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-677
Structure Type	Catch Basin
Outfall ID	OF-807
Date	2023-04-25
Time	13:14
Address	14 Chase Run Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Grease and possible paint has been dumped into structure. Cleaning is recommended.
Manhole Invert (inches)	0

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	0
Pipe Notes	Pipe was submerged in flow
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is full of standing water. Due to significant amount of floatables, depth of structure could not be determined.

Physical Indicators

Floatables	Yes
Floatables Type	Grease
Floatables Note	Grease and possibly paint present
Odor	Yes
Odor Type	Rancid/Sour, Petroleum/Gas

Structure

Sampling Location	Structure

Field Kits

Temperature	0
pH	0
Specific Conductivity (SPC)	0

Surfactants	0.5
Chlorine	0
Ammonia	6
Sampling Notes	Due to the turbidity and amount of floatables present in water, pH, temperature, SPC and Chlorine could not be measured. Surfactants is an approximate estimation.
Surface Photos	
Interior Photos	

OF-207, SWMH-new

Project	MVGP - 10/05 - Friday
Created	2023-04-11 12:39:16 UTC by EPField 01
Updated	2023-04-11 12:51:11 UTC by EPField 01
Location	42.0893939, -71.1221191

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-new
Structure Type	Manhole
Outfall ID	OF-207
Date	2023-04-11
Time	08:39
Address	16 Overlook Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	61

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	60

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	59
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	12

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Temperature	52.5
pH	6.81
Specific Conductivity (SPC)	736
Surfactants	1
Chlorine	0.1
Ammonia	0
Surface Photos	

Interior Photos

OF-105, SWMH-136

Created	2023-03-23 18:27:16 UTC by EPField 01
Updated	2023-03-23 18:51:07 UTC by EPField 01
Location	42.1121640865346, -71.06875205915642

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Mike Franck
Structure ID	SWMH-136
Structure Type	Manhole
Outfall ID	OF-105
Date	2023-03-23
Time	14:27
Address	54–62 Campanelli Pkwy Stoughton, MA 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	64

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	58

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	34

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	59

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	2, 11

Physical Indicators

Floatables	No
Odor	No

Pipe, 11

Sampling Location	Pipe
Pipe Clock Position	11

Field Kits

Temperature	58.3
pH	6.21
Specific Conductivity (SPC)	1494
Surfactants	1.5
Chlorine	0.03
Ammonia	0

Pipe, 2

Sampling Location	Pipe
Pipe Clock Position	2

Field Kits

Temperature	56.8
pH	6.05
Specific Conductivity (SPC)	1333
Surfactants	1.5
Chlorine	0.23
Ammonia	0

Surface Photos

Interior Photos

OF-419, SWMH-1421

Created	2023-03-23 13:13:07 UTC by EPField 01
Updated	2023-03-23 13:20:07 UTC by EPField 01
Location	42.16368085512329, -71.06615322742594

Background Data

Client	Town of Stoughton
EP Representatives	Mike Franck, Annie Tucker
Structure ID	SWMH-1421
Structure Type	Manhole
Outfall ID	OF-419
Date	2023-03-23
Time	09:13
Address	19 Drinkwater Ave Randolph, MA 02368

Structure Information

Maintenance Required	No
Manhole Invert (inches)	82

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	83

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	82.5
Pipe Notes	Interconnection with Randolph

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	75

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	78
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-378, OF-378

Project	MVGP - 10/05 - Friday
Created	2023-04-27 18:58:45 UTC by EPField 01
Updated	2023-04-27 19:04:26 UTC by EPField 01
Location	42.08380224589104, -71.1184093

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	OF-378
Structure Type	Outfall
Outfall ID	OF-378
Date	2023-04-27
Time	14:58
Address	12 Highland Rock Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	remove silt sock if applicable
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	Inlet/culvert

Physical Indicators

Floatables	No
Odor	No

Structure

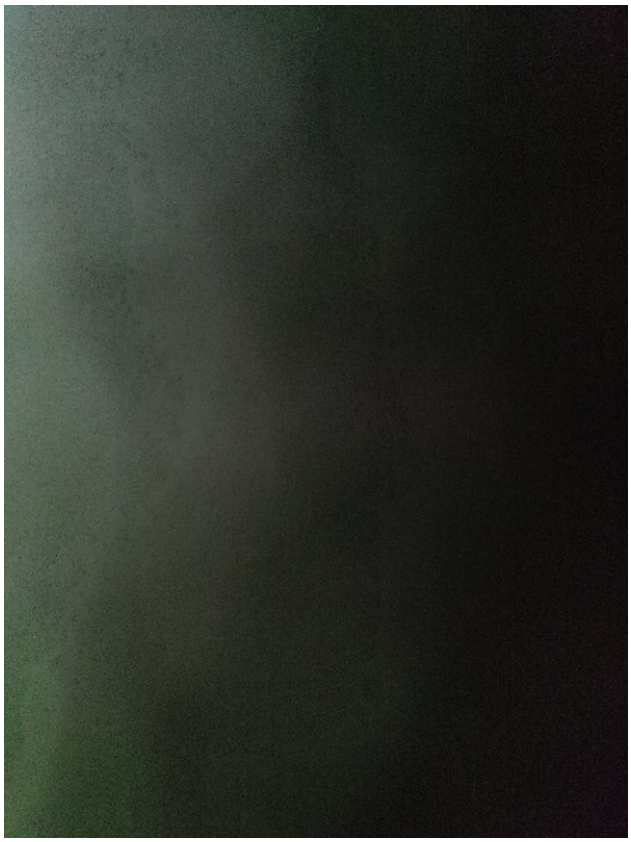
Sampling Location	Structure

Field Kits

Temperature	57.6
pH	6.3
Specific Conductivity (SPC)	634
Surfactants	0.25
Chlorine	0.08
Ammonia	0
Sampling Notes	Likely just stream flow
General Notes	Sampling from outfall because upstream catch basin had silt sock. Manhole in system was unable to be located.

Surface Photos

Interior Photos



New, SWMH-1360

Created	2023-04-27 15:44:50 UTC by EPField 01
Updated	2023-04-27 17:55:29 UTC by EPField 01
Location	42.1341712, -71.1424619

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1360
Structure Type	Manhole
Outfall ID	New
Date	2023-04-27
Time	11:44
Address	2161 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning; deposits observed
Manhole Invert (inches)	57

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	39
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No

Odor	No
Surface Photos	
Interior Photos	

OF-553, SWMH-748

Created	2023-04-27 19:35:18 UTC by EPField 01
Updated	2023-04-27 19:39:57 UTC by EPField 01
Location	42.0864331, -71.1168942

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-748
Structure Type	Manhole
Outfall ID	OF-553
Date	2023-04-27
Time	15:35
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	48

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	46

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	46

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No

General Notes	Could not open during the FY22 catchment investigations. Successfully opened during FY23 catchment investigations.

Surface Photos

Interior Photos

OF-65, SWMH-NEW

Created	2023-04-27 15:03:08 UTC by EPField 01
Updated	2023-04-27 15:21:06 UTC by EPField 01
Location	42.1304552, -71.1301441

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-27
Time	11:03
Address	1810 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	126

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	117

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	116

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	88

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	88

2

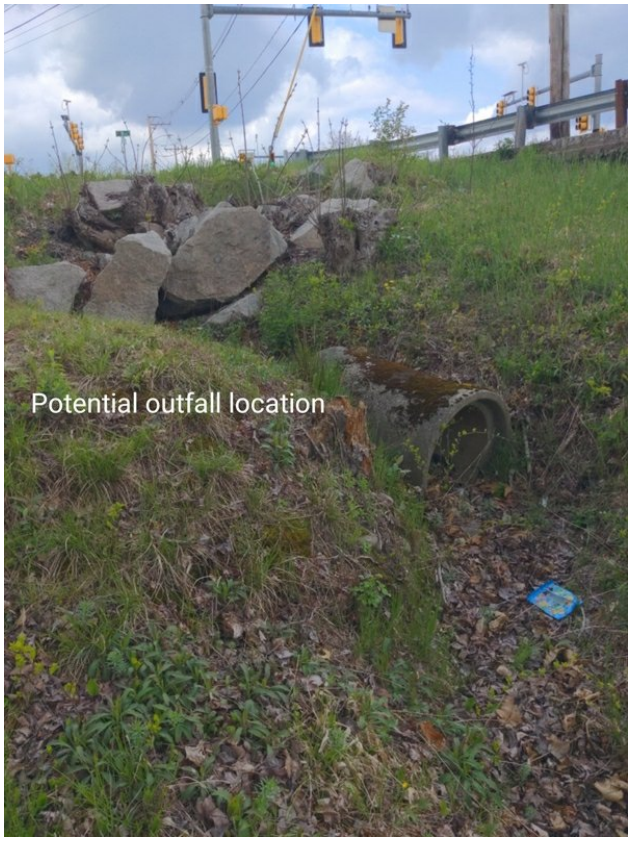
Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
General Notes	Confirm connectivity with Town
Surface Photos	

Interior Photos

Other Photos



OF-792, SWMH-2038

Created	2023-04-27 12:17:26 UTC by EPField 01
Updated	2023-04-27 12:22:36 UTC by EPField 01
Location	42.1600391, -71.0635403

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2038
Structure Type	Manhole
Outfall ID	OF-792
Date	2023-04-27
Time	08:17
Address	G2 Central Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	82

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	71

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65

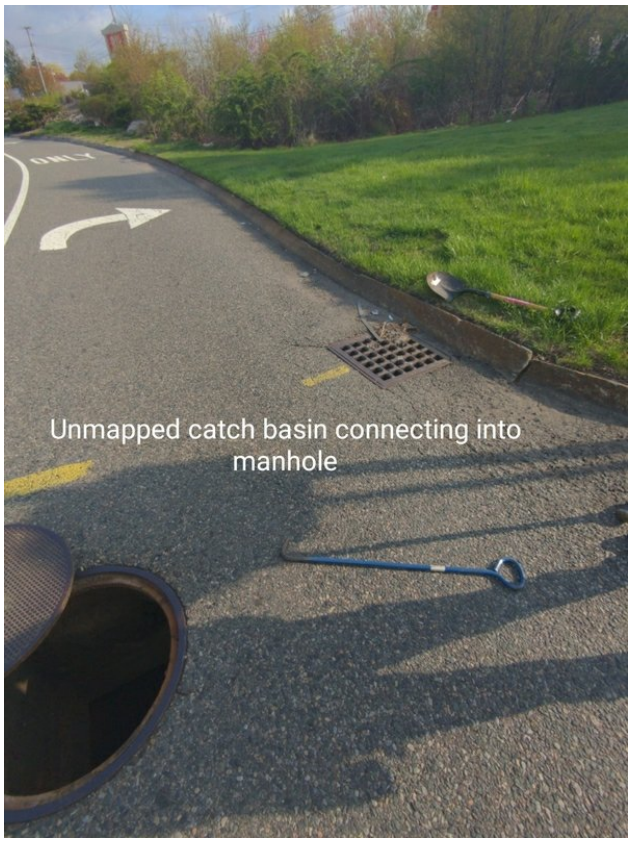
Pipe Notes	Unmapped in GIS
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water observed

Physical Indicators

Floatables	No
Odor	No
General Notes	Interconnection between private and Town.
Surface Photos	

Interior Photos

Other Photos



OF-55, SWMH-31

Project	MVGP - 10/05 - Friday
Created	2023-04-11 14:20:50 UTC by EPField 01
Updated	2023-04-11 14:35:39 UTC by EPField 01
Location	42.1045438, -71.0820055

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-31
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	10:20
Address	8 Atkinson Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	90

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	88

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	86
Pipe Notes	Flowing

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	72
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	10

Physical Indicators

Floatables	No
Odor	No

Pipe, 10

Sampling Location	Pipe
Pipe Clock Position	10

Field Kits

Temperature	56.6
pH	7.04
Specific Conductivity (SPC)	95.1
Surfactants	0.25
Chlorine	0.15
Ammonia	0
Surface Photos	

Interior Photos

OF-807, SWMH-34

Created	2023-04-10 18:11:07 UTC by EPField 01
Updated	2023-04-10 19:37:17 UTC by EPField 01
Location	42.1039889, -71.0800357

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-34
Structure Type	Manhole
Outfall ID	OF-807
Date	2023-04-10
Time	14:11
Address	22 Chase Run Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	54

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	54

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	54

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	54

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

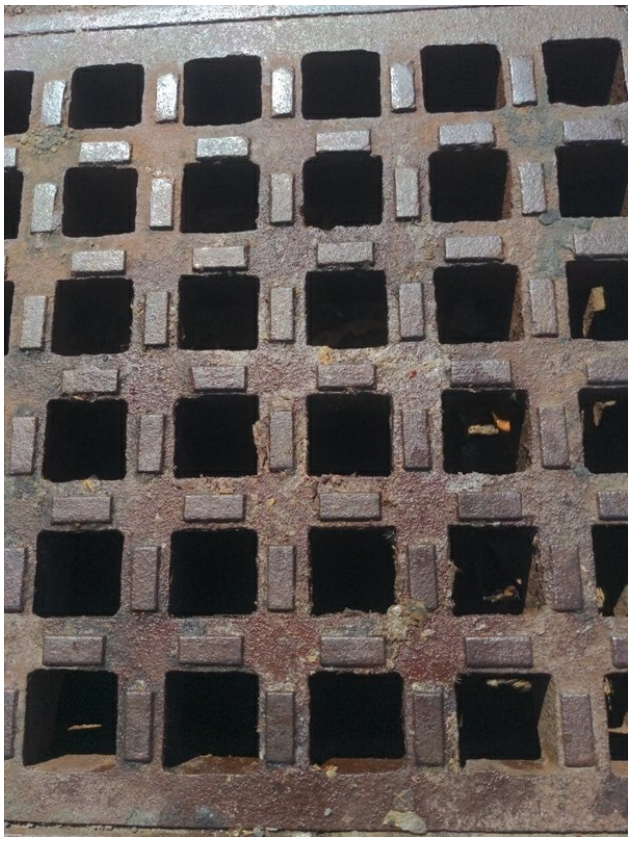
Physical Indicators

Floatables	Yes
Floatables Type	Grease
Floatables Note	Grease found in the upstream catch basin SWIN-677, located in front of 22 Chase Run
Odor	Yes
Odor Type	Rancid/Sour
Odor Note	Odor smells like feces.
Surface Photos	

Interior Photos

Other Photos


DRAINS TO WATERWAYS
DUMP NO WASTE!
DRAINS TO WATERWAYS
DUMP NO WASTE!



OF-NEW , SCUPPER-NEW

Created	2023-04-27 19:14:55 UTC by EPField 01
Updated	2023-04-27 19:22:50 UTC by EPField 01
Location	42.0862019, -71.1175688

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SCUPPER-NEW
Structure Type	Outfall
Outfall ID	OF-NEW
Date	2023-04-27
Time	15:14
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Scupper

Physical Indicators

Floatables	No
Odor	No
General Notes	Deposits found in scupper

Surface Photos

Interior Photos

OF-CNL, SWIN-3008

Created	2023-04-10 13:13:20 UTC by EPField 01
Updated	2023-04-10 15:00:22 UTC by EPField 01
Location	42.1572916, -71.0642356

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3008
Structure Type	Catch Basin
Outfall ID	OF-CNL
Date	2023-04-10
Time	09:13
Address	406 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Clean sediment within structure and outgoing pipe.
Manhole Invert (inches)	51

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	39
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water and sediment present.

Physical Indicators

Floatables	No
Odor	No
General Notes	Could not locate outfall

Surface Photos

Interior Photos

OF-251, SWMH-1906

Created	2023-04-27 18:32:04 UTC by EPField 01
Updated	2023-04-28 17:48:54 UTC by EPField 01
Location	42.0896143, -71.1342436

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1906
Structure Type	Manhole
Outfall ID	OF-251
Date	2023-04-27
Time	14:32
Address	52 Jordan Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	76

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	79

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	78
Pipes Submerged	Partially
Submerged Pipes	Both
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
General Notes	Could not open during the FY22 catchment investigations. Successfully opened during FY23 catchment investigations.

Surface Photos

Interior Photos

OF-243, SWMH-1774

Created	2023-04-25 17:42:36 UTC by EPField 01
Updated	2023-04-25 17:44:23 UTC by EPField 01
Location	42.1228744, -71.0777735

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1774
Structure Type	Manhole
Outfall ID	OF-243
Date	2023-04-25
Time	13:42
Address	282 William Kelley Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	61

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	61

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-CNL, SWIN-3228

Created	2023-04-10 14:05:48 UTC by EPField 01
Updated	2023-04-10 14:19:37 UTC by EPField 01
Location	42.1517732, -71.0656876

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3228
Structure Type	Catch Basin
Outfall ID	OF-CNL
Date	2023-04-10
Time	10:05
Address	601 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Pipe Blockage, Catch basin is 90% full of sediment and should be jetted.
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is full of sediment. Could not verify pipe details. Could not locate outfall/outlet.

Physical Indicators

Floatables	No
Odor	No
General Notes	Manhole across the street potentially connected to catchment, however, manhole could not be opened. Further Town assistance to open manhole and confirm connectivity required.

Surface Photos

Interior Photos

Other Photos

OF-NEW , SCUPPER-NEW

Created	2023-04-27 19:18:20 UTC by EPField 01
Updated	2023-04-27 19:26:38 UTC by EPField 01
Location	42.08641720151979, -71.11760862663735

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SCUPPER-NEW
Structure Type	Outfall
Outfall ID	OF-NEW
Date	2023-04-27
Time	15:18
Address	1782 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	Scupper

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-792, SWMH-2039

Created	2023-04-27 12:26:02 UTC by EPField 01
Updated	2023-04-27 12:43:28 UTC by EPField 01
Location	42.1601206, -71.0632578

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2039
Structure Type	Manhole
Outfall ID	OF-792
Date	2023-04-27
Time	08:26
Address	G2 Central Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	12:00 incoming pipe is 60% partially filled with deposits and manhole is also partially filled with deposits.
Manhole Invert (inches)	31

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	27

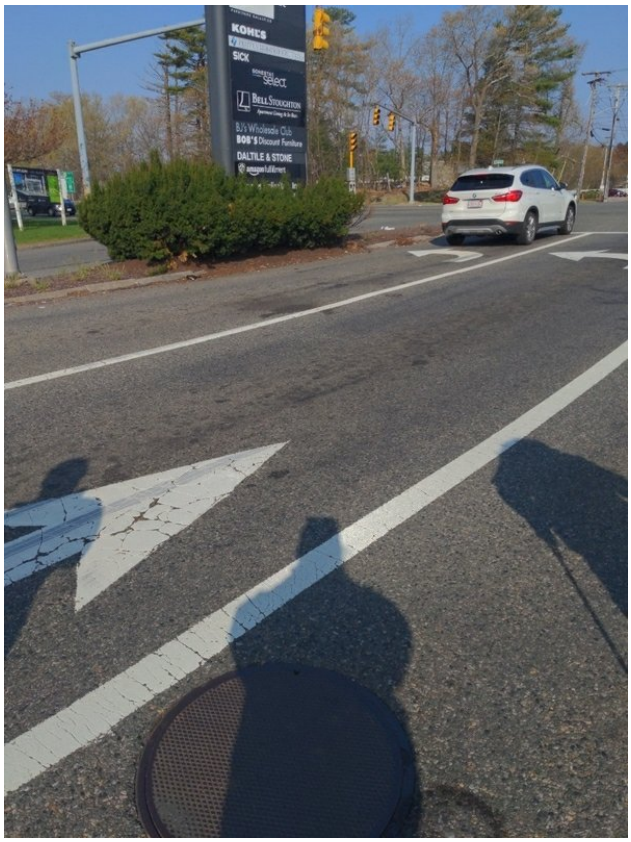
6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	31
Pipe Notes	60% filled with deposits
Pipes Submerged	No
Flow Present	No
Structure Notes	Cannot accurately measure depth of manhole due to the amount of deposits within the manhole.

Physical Indicators

Floatables	No
Odor	No
General Notes	Catch basin upstream are filled with debris

Surface Photos


KOHL'S
SICK
Bell Stroughton
B.J's Wholesale Club
DALTILE & STONE

Interior Photos

OF-516, SWMH-143

Created	2023-03-31 13:08:57 UTC by EPField 01
Updated	2023-03-31 13:13:32 UTC by EPField 01
Location	42.117226, -71.0931928

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-143
Structure Type	Manhole
Outfall ID	OF-516
Date	2023-03-31
Time	09:08
Address	210 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	55

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	57

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	57

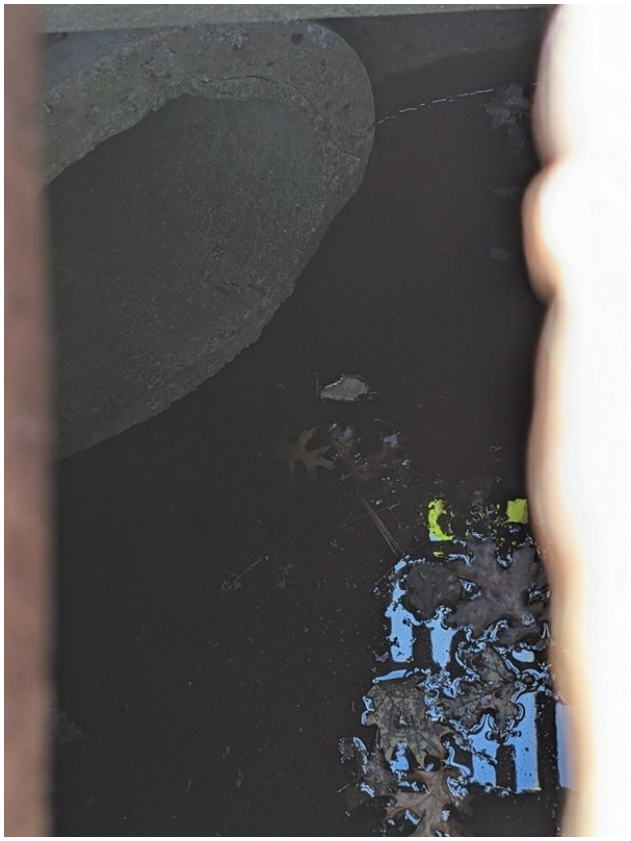
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
General Notes	Structure is dry
Surface Photos	

Interior Photos

Other Photos



OF-516, SWMH-403

Created	2023-03-31 13:49:31 UTC by EPField 01
Updated	2023-03-31 13:56:26 UTC by EPField 01
Location	42.1163668, -71.0931837

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-403
Structure Type	Manhole
Outfall ID	OF-516
Date	2023-03-31
Time	09:49
Address	236 Bancroft Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-358, SWIN-3220

Created	2023-04-10 14:29:16 UTC by EPField 01
Updated	2023-04-10 14:31:20 UTC by EPField 01
Location	42.1524162, -71.0656837

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3220
Structure Type	Catch Basin
Outfall ID	OF-358
Date	2023-04-10
Time	10:29
Address	501 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	63

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	0
Pipe Notes	There is a hood on the pipe
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is full of standing water

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

SWMH-2025-INTERCONNECTION, SWMH-2025

Created	2023-04-10 15:00:25 UTC by EPField 01
Updated	2023-04-10 15:04:38 UTC by EPField 01
Location	42.148722, -71.0643274

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2025
Structure Type	Manhole
Outfall ID	SWMH-2025-INTERCONNECTION
Date	2023-04-10
Time	11:00
Address	979-999 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	76

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	72

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
General Notes	Located at the entrance of Amazon.
Surface Photos	

Interior Photos

OF-803, SWMH-566

Project	MVGP - 10/05 - Friday
Created	2023-03-21 18:48:09 UTC by EPField 01
Updated	2023-03-21 18:52:04 UTC by EPField 01
Location	42.0767758, -71.1322764

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-566
Structure Type	Manhole
Outfall ID	OF-803
Date	2023-03-21
Time	14:48
Address	154 Eagle Rock Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	41

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	44

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	41

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	9

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	41
Pipe Notes	All pipes appear to be at the same invert as outlet pipe
Pipes Submerged	Partially
Submerged Pipes	All
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-516, SWMH-405

Created	2023-03-31 12:55:55 UTC by EPField 01
Updated	2023-03-31 13:01:21 UTC by EPField 01
Location	42.1179456, -71.0911822

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-405
Structure Type	Manhole
Outfall ID	OF-516
Date	2023-03-31
Time	08:55
Address	70 Bancroft Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	55

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55
Pipes Submerged	No
Flow Present	No

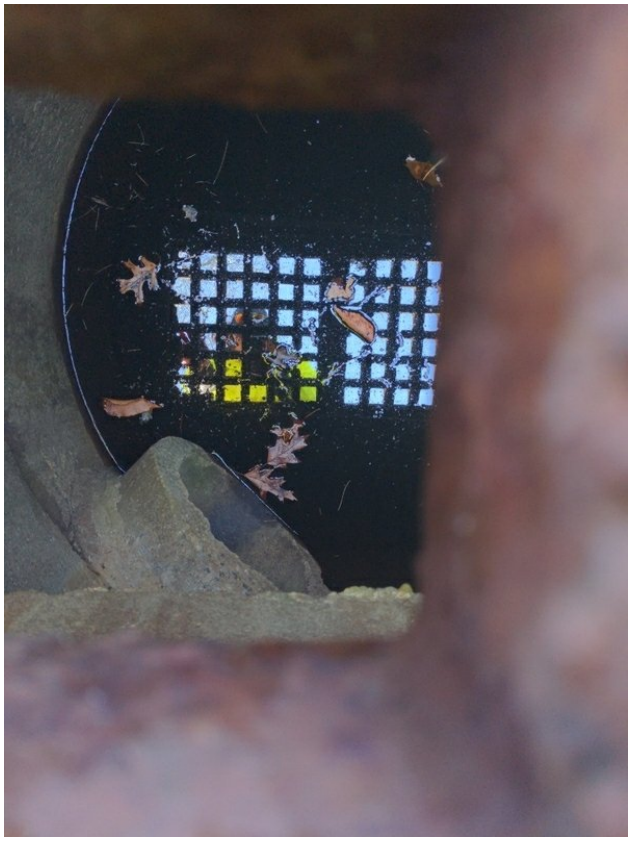
Physical Indicators

Floatables	No
Odor	No
General Notes	Structure is dry

Surface Photos

Interior Photos

Other Photos



OF-56, SWMH-18

Created	2023-04-11 21:06:53 UTC by EPField 01
Updated	2023-04-11 21:08:38 UTC by EPField 01
Location	42.101164, -71.0855485

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-18
Structure Type	Manhole
Outfall ID	OF-56
Date	2023-04-11
Time	17:06
Address	12 Daly Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	64

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	60

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	60
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-809, SWIN-2589

Project	MVGP - 10/05 - Friday
Created	2023-04-04 17:41:21 UTC by EPField 01
Updated	2023-04-04 17:53:10 UTC by EPField 01
Location	42.139523, -71.0766179

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-2589
Structure Type	Catch Basin
Outfall ID	OF-809
Date	2023-04-04
Time	13:41
Address	1151 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	82

6

Pipe Clock Position	6
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	42

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	41
Pipe Notes	PRIVATE

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45
Pipe Notes	BLOCKED OFF
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle

Flow Source	3

Physical Indicators

Floatables	No
Odor	No

Pipe, 3

Sampling Location	Pipe
Pipe Clock Position	3

Field Kits

Temperature	52.9
pH	7.14
Specific Conductivity (SPC)	559
Surfactants	0.75
Chlorine	0.14
Ammonia	0
Surface Photos	

Interior Photos

OF-516, SWMH-455

Created	2023-04-03 13:26:03 UTC by EPField 01
Updated	2023-04-03 13:30:28 UTC by EPField 01
Location	42.1136059, -71.0891289

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-455
Structure Type	Manhole
Outfall ID	OF-516
Date	2023-04-03
Time	09:26
Address	387 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	61

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	60

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	62
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	12:00, incoming
Structure Notes	Trickling, not enough to sample

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-55, SWMH-461

Created	2023-04-11 16:48:34 UTC by EPField 01
Updated	2023-04-11 16:54:56 UTC by EPField 01
Location	42.1049364, -71.0819251

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-461
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	12:48
Address	770 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	97

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	95

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	95

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	94

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67
Pipe Notes	Upper

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	90
Pipe Notes	Lower
Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Substantial
Flow Source	Culverted stream located upstream

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-NEW, Vortechnics

Created	2023-04-04 18:11:58 UTC by EPField 01
Updated	2023-04-04 18:20:47 UTC by EPField 01
Location	42.1373467, -71.0766231

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	Vortechnics
Structure Type	BMP
Outfall ID	OF-NEW
Date	2023-04-04
Time	14:11
Address	1101 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Clean floatable and oil seen in structure. Reference Vortechnics O&M plan for cleaning schedule.
Manhole Invert (inches)	97
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	Yes
Floatables Type	Oil and trash
Floatables Note	Consider cleaning floatables and refer to Vortechnics O &M for cleaning schedule.
Odor	No
General Notes	Vortechnics structures are located in the grass

Surface Photos

Interior Photos

Other Photos

OF-NEW , SWMH-1022

Created	2023-04-11 19:38:47 UTC by EPField 01
Updated	2023-04-11 19:42:08 UTC by EPField 01
Location	42.1269618, -71.1316545

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1022
Structure Type	Manhole
Outfall ID	OF-NEW
Date	2023-04-11
Time	15:38
Address	144 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Base of manhole has erroded. Recommend repairing.
Manhole Invert (inches)	93

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	90

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57
Pipes Submerged	No
Flow Present	No
Structure Notes	Erosion observed at the bottom of structure.

Physical Indicators

Floatables	No

Odor	No
Surface Photos	 

Interior Photos

N/A (leaching catch basin), SWIN-1986

Created	2023-04-04 19:31:47 UTC by EPField 01
Updated	2023-04-04 19:35:46 UTC by EPField 01
Location	42.1294868, -71.0750807

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-1986
Structure Type	Catch Basin
Outfall ID	N/A (leaching catch basin)
Date	2023-04-04
Time	15:31
Address	779 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	75

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	HDPE
Pipe Diameter (inches)	6
Pipe Invert (inches)	18
Pipe Notes	Pipe appears to be discharging from 774 Turnpike St.
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
General Notes	No other drainage connected to structure.

Surface Photos

Interior Photos

OF-751, SWMH-462

Created	2023-04-11 15:23:26 UTC by EPField 01
Updated	2023-04-11 15:25:57 UTC by EPField 01
Location	42.1028377, -71.0811829

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-462
Structure Type	Manhole
Outfall ID	OF-751
Date	2023-04-11
Time	11:23
Address	860 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	78

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	78

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	Orangeburg
Pipe Diameter (inches)	12
Pipe Invert (inches)	46

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	78
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-55, SWMH-439

Created	2023-04-11 14:56:42 UTC by EPField 01
Updated	2023-04-11 14:59:02 UTC by EPField 01
Location	42.1036621, -71.0813775

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-439
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	10:56
Address	907 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	88

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	87

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	87

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-55, SWMH-27

Created	2023-04-11 14:09:22 UTC by EPField 01
Updated	2023-04-11 14:10:55 UTC by EPField 01
Location	42.1027541, -71.0837095

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-27
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	10:09
Address	34 Sullivan Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	62

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	63
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-769, SWIN-104

Created	2023-03-31 14:58:42 UTC by EPField 01
Updated	2023-03-31 15:01:59 UTC by EPField 01
Location	42.1099766, -71.1309475

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-104
Structure Type	Catch Basin
Outfall ID	OF-769
Date	2023-03-31
Time	10:58
Address	86 Polillio Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	52

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	38

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	38
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
General Notes	Manhole is completely paved over.

Surface Photos

Interior Photos

Other Photos

OF-805, SWMH-553

Created	2023-03-21 19:24:38 UTC by EPField 01
Updated	2023-03-21 19:32:47 UTC by EPField 01
Location	42.0794898, -71.1329355

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-553
Structure Type	Manhole
Outfall ID	OF-805
Date	2023-03-21
Time	15:24
Address	110 Eagle Rock Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	100

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	103

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	62

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	75

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	64

Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-453, SWMH-267

Project	MVGP - 10/05 - Friday
Created	2023-03-30 16:13:43 UTC by EPField 01
Updated	2023-03-30 16:25:56 UTC by EPField 01
Location	42.1113918, -71.1172549

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-267
Structure Type	Manhole
Outfall ID	OF-453
Date	2023-03-30
Time	12:13
Address	37 Farrington Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	82

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	36
Pipe Invert (inches)	80.5

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	36
Pipe Invert (inches)	79

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	44

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	53
Pipes Submerged	No
Flow Present	Yes
Flow Description	Substantial
Flow Source	12

Physical Indicators

Floatables	No
Odor	No

Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	51.1
pH	6.8
Specific Conductivity (SPC)	127.8
Surfactants	0.25
Chlorine	0.07
Ammonia	0
Surface Photos	

Interior Photos

OF-55, SWMH-399

Created	2023-04-11 17:08:30 UTC by EPField 01
Updated	2023-04-11 17:14:42 UTC by EPField 01
Location	42.1067921, -71.0818065

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-399
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	13:08
Address	217 Cedar Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	75

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	64

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-355, SWIN-3238

Created	2023-04-04 13:59:19 UTC by EPField 01
Updated	2023-04-04 14:02:26 UTC by EPField 01
Location	42.1566884, -71.0647144

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3238
Structure Type	Catch Basin
Outfall ID	OF-355
Date	2023-04-04
Time	09:59
Address	406 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	59

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	0
Pipe Invert (inches)	0
Pipe Notes	Confirmed pipe diameter from outfall. Pipe within catch basin has a hood, therefore, could not confirm pipe diameter or invert.
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present.

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-322, SWMH-322

Created	2023-04-10 17:10:13 UTC by EPField 01
Updated	2023-04-10 17:14:41 UTC by EPField 01
Location	42.1161562, -71.1195143

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-322
Structure Type	Manhole
Outfall ID	OF-322
Date	2023-04-10
Time	13:10
Address	160 Poskus Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	32

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	35

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	33

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	33
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

General Notes	Replacement of the cover and frame is recommended. Severely rust is observed.

Surface Photos

Interior Photos

SWMH-2027- INTERCONNECTION, SWNH-2027

Created	2023-04-10 14:45:59 UTC by EPField 01
Updated	2023-04-10 14:52:42 UTC by EPField 01
Location	42.1502529, -71.0648412

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWNH-2027
Structure Type	Manhole
Outfall ID	SWMH-2027- INTERCONNECTION
Date	2023-04-10
Time	10:45
Address	761 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	115

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	110

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	63

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	88
Pipe Notes	Capped
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-64, SWMH-891

Created	2023-04-11 18:27:41 UTC by EPField 01
Updated	2023-04-25 13:10:59 UTC by EPField 01
Location	42.1307929, -71.1289223

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-891
Structure Type	Manhole
Outfall ID	OF-64
Date	2023-04-11
Time	14:27
Address	1749 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	53

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Clay
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	PVC
Pipe Diameter (inches)	4
Pipe Invert (inches)	31
Pipe Notes	From 1749 Central Street

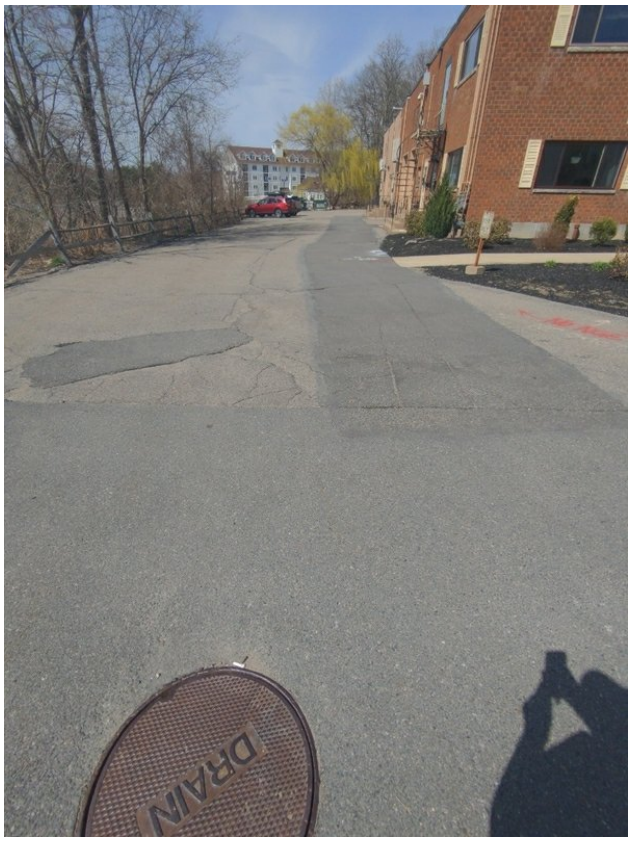
12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	12

Pipe Invert (inches)	55
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
Surface Photos	



Interior Photos

OF-65, SWMH-1231

Created	2023-04-25 13:05:40 UTC by EPField 01
Updated	2023-04-27 15:26:53 UTC by EPField 01
Location	42.1308892, -71.1309717

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1231
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-25
Time	09:05
Address	1818 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	56

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	10
Pipe Invert (inches)	54

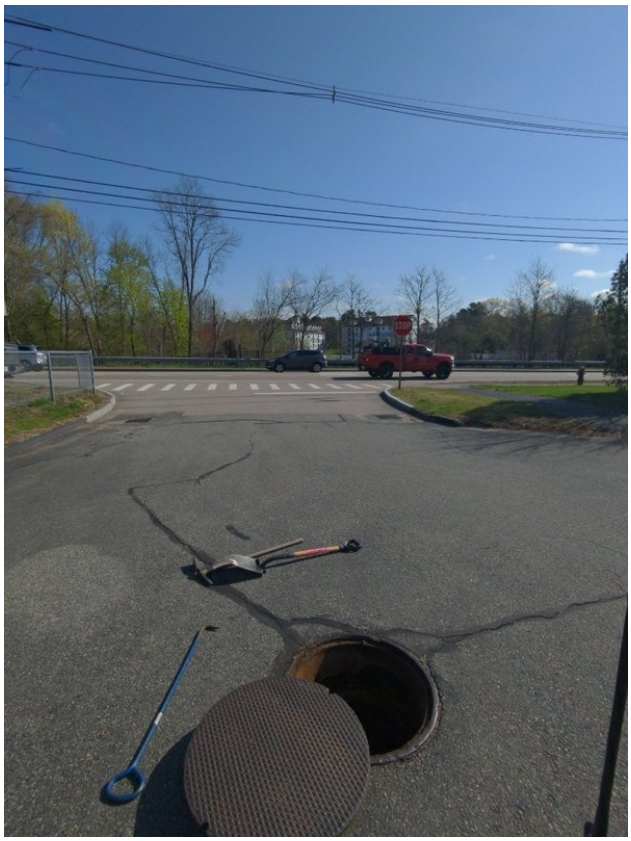
11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	10
Pipe Invert (inches)	53.5

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

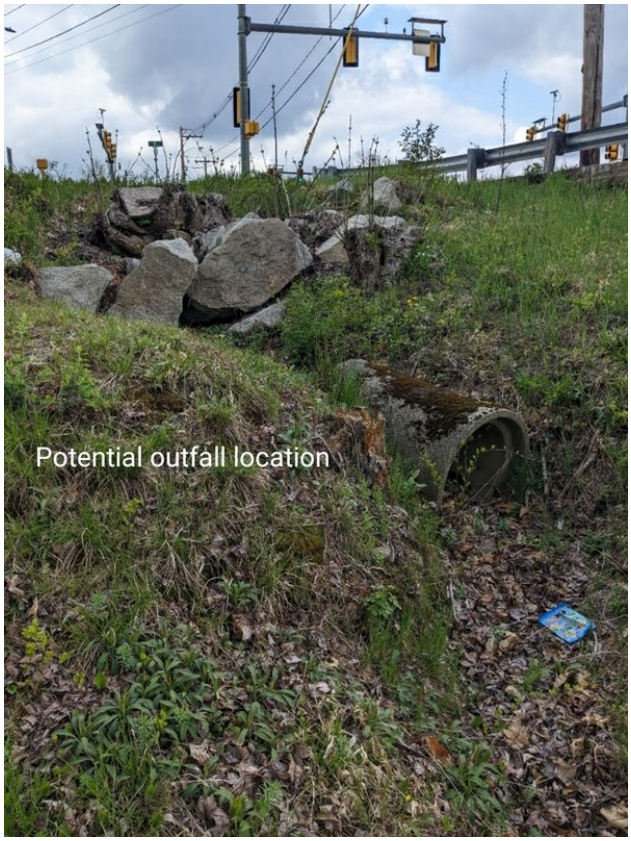
Physical Indicators

Floatables	No
Odor	No
Surface Photos	



Interior Photos

Other Photos



OF-769, SWMH-242

Created	2023-03-31 15:39:03 UTC by EPField 01
Updated	2023-03-31 15:41:49 UTC by EPField 01
Location	42.1115268, -71.1308681

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-242
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-03-31
Time	11:39
Address	192 Everett Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	58

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	30

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	36
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-354, SWIN-3239

Created	2023-04-04 13:54:07 UTC by EPField 01
Updated	2023-04-04 13:57:22 UTC by EPField 01
Location	42.156638, -71.0645513

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3239
Structure Type	Catch Basin
Outfall ID	OF-354
Date	2023-04-04
Time	09:54
Address	406 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	53

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	39
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure has standing water but outgoing pipe is dry.

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-65, SWMH-1051

Created	2023-04-27 14:48:18 UTC by EPField 01
Updated	2023-04-27 14:53:46 UTC by EPField 01
Location	42.1302581, -71.1300495

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1051
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-27
Time	10:48
Address	26 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	96

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	96

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	93

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	41

Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-453, SWMH-203

Project	MVGP - 10/05 - Friday
Created	2023-03-30 14:53:27 UTC by EPField 01
Updated	2023-03-30 15:29:32 UTC by EPField 01
Location	42.1123776, -71.1190513

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-203
Structure Type	Manhole
Outfall ID	OF-453
Date	2023-03-30
Time	10:53
Address	128 Swanson Terrace Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	94

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	36
Pipe Invert (inches)	90

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	36
Pipe Invert (inches)	90

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	18
Pipe Invert (inches)	73

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	60

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59
Pipes Submerged	No
Flow Present	Yes
Flow Description	Substantial
Flow Source	10, 1, 2

Physical Indicators

Floatables	No
Odor	No

Pipe, 2

Sampling Location	Pipe
Pipe Clock Position	2

Field Kits

Temperature	54
pH	7.28
Specific Conductivity (SPC)	368
Surfactants	0.25
Chlorine	0
Ammonia	0

Pipe, 1

Sampling Location	Pipe
Pipe Clock Position	1

Field Kits

Temperature	53.4
pH	6.82
Specific Conductivity (SPC)	451
Surfactants	0.75
Chlorine	0.2
Ammonia	0.25

Pipe, 10

Sampling Location	Pipe
Pipe Clock Position	10

Field Kits

Temperature	52.3

pH	6.48
Specific Conductivity (SPC)	141.1
Surfactants	0.5
Chlorine	0.06
Ammonia	0
Surface Photos	

Interior Photos

OF-792, SWMH-2292

Project	MVGP - 10/05 - Friday
Created	2023-04-27 12:53:46 UTC by EPField 01
Updated	2023-04-27 13:05:38 UTC by EPField 01
Location	42.1598179, -71.0635484

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2292
Structure Type	Manhole
Outfall ID	OF-792
Date	2023-04-27
Time	08:53
Address	G2 Central Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	70

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	63

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	67
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	1

Physical Indicators

Floatables	No
Odor	No

Pipe, 1

Sampling Location	Pipe
Pipe Clock Position	1

Field Kits

Temperature	56.3
pH	6.91
Specific Conductivity (SPC)	1639
Surfactants	0.5
Chlorine	0.08
Ammonia	0
General Notes	Manhole is private. Sampling here because upstream Town manhole could not be located (may be buried in soil in center island)
Surface Photos	

Interior Photos

OF-65, SWMH-1021

Created	2023-04-25 14:10:07 UTC by EPField 01
Updated	2023-04-27 15:22:28 UTC by EPField 01
Location	42.1289885, -71.1308903

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1021
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-25
Time	10:10
Address	74 West Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Debris and bricks found at the bottom of the structure and needs to be cleaned
Manhole Invert (inches)	78

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	78

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	51

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No

Odor	No
Surface Photos	
	

Interior Photos

Other Photos

OF-751, SWMH-NEW

Created	2023-04-11 15:50:03 UTC by EPField 01
Updated	2023-04-11 16:06:31 UTC by EPField 01
Location	42.0983481, -71.0801323

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-751
Date	2023-04-11
Time	11:50
Address	1012 Sumner Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	103

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	104

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	102

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	101

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61
Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	Stream located upstream

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-55, SWMH-26

Project	MVGP - 10/05 - Friday
Created	2023-04-11 13:50:03 UTC by EPField 01
Updated	2023-04-11 14:03:20 UTC by EPField 01
Location	42.1036914, -71.0843174

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-26
Structure Type	Manhole
Outfall ID	OF-55
Date	2023-04-11
Time	09:50
Address	69 Atkinson Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	106

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	99

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	62

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	95
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	12

Physical Indicators

Floatables	No
Odor	No

Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	54.5
pH	7.4
Specific Conductivity (SPC)	98.8
Surfactants	0.25
Chlorine	0.24
Ammonia	0
Surface Photos	

Interior Photos

OF-788, SWMH-1553

Created	2023-03-23 14:13:21 UTC by EPField 01
Updated	2023-03-23 14:17:53 UTC by EPField 01
Location	42.130193150176176, -71.07112354975375

Background Data

Client	Town of Stoughton
EP Representatives	Mike Franck, Annie Tucker
Structure ID	SWMH-1553
Structure Type	Manhole
Outfall ID	OF-788
Date	2023-03-23
Time	10:13
Address	142 Larson Rd Stoughton, MA 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	110

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	107

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	Unknown
Pipe Diameter (inches)	12
Pipe Invert (inches)	106

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	Corrugated Plastic
Pipe Diameter (inches)	10
Pipe Invert (inches)	66
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-694, SWMH-2271

Created	2023-04-04 16:42:41 UTC by EPField 01
Updated	2023-04-04 16:45:22 UTC by EPField 01
Location	42.1425402, -71.076395

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2271
Structure Type	Manhole
Outfall ID	OF-694
Date	2023-04-04
Time	12:42
Address	9 Maple Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	58

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	49

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	42

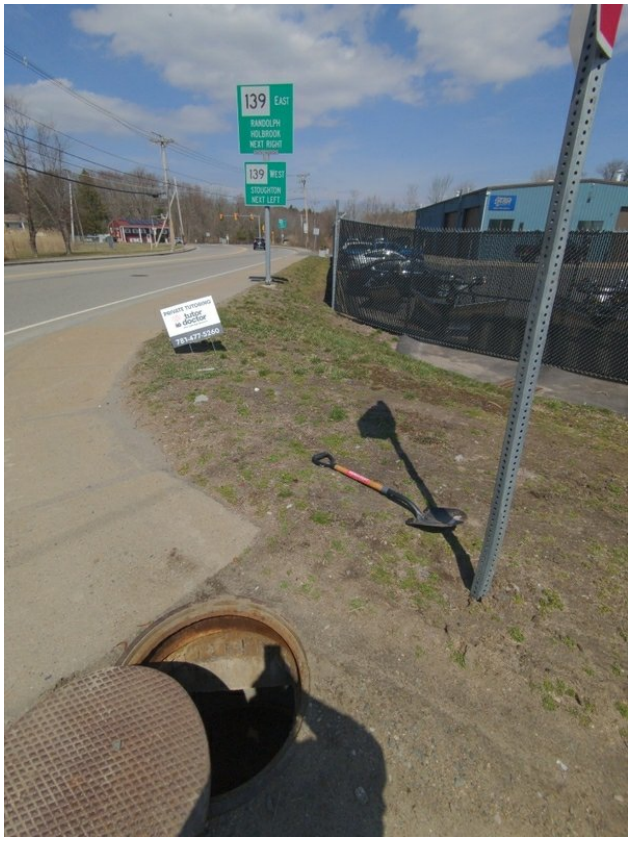
12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	40
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No

Surface Photos



Interior Photos

OF-769, SWMH-2311

Project	MVGP - 10/05 - Friday
Created	2023-04-03 16:05:42 UTC by EPField 01
Updated	2023-04-03 16:10:23 UTC by EPField 01
Location	42.1116226, -71.1339285

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2311
Structure Type	Manhole
Outfall ID	OF-769
Date	2023-04-03
Time	12:05
Address	1154 Bay Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	99

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	104

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	101

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	72

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	72
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-801, SWMH-456

Created	2023-04-03 13:41:42 UTC by EPField 01
Updated	2023-04-03 13:48:56 UTC by EPField 01
Location	42.1122126, -71.0880018

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-456
Structure Type	Manhole
Outfall ID	OF-801
Date	2023-04-03
Time	09:41
Address	466 Hynes Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Regrade the manhole structure and dewater the standing water. Replace cover and frame; when opening structure, frame came off with cover.
Manhole Invert (inches)	76

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	60

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP

Pipe Diameter (inches)	12
Pipe Invert (inches)	70
Pipes Submerged	Partially
Submerged Pipes	6:00, 1:00 and 2:00
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-643, OF-643

Created	2023-04-25 19:45:44 UTC by EPField 01
Updated	2023-04-25 19:49:50 UTC by EPField 01
Location	42.1045578, -71.0840795

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	OF-643
Structure Type	Manhole
Outfall ID	OF-643
Date	2023-04-25
Time	15:45
Address	18 Fitzpatrick Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	73

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	42
Pipe Invert (inches)	68
Pipe Notes	Culvert

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	37

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	42
Pipe Invert (inches)	66
Pipe Notes	Culvert

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP

Pipe Diameter (inches)	12
Pipe Invert (inches)	40

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	39
Pipes Submerged	Partially
Submerged Pipes	12:00 and 6:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	Culvert located in structure
Structure Notes	Structure is the outfall.

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-616, SWMH-1696

Created	2023-04-04 19:09:44 UTC by EPField 01
Updated	2023-04-04 19:15:59 UTC by EPField 01
Location	42.133801, -71.0758568

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1696
Structure Type	BMP
Outfall ID	OF-616
Date	2023-04-04
Time	15:09
Address	930 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Maintenance per BMP O&M plan
Manhole Invert (inches)	0

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Clay
Pipe Diameter (inches)	12
Pipe Invert (inches)	0
Pipe Notes	Could not measure invert accurately.

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	23
Pipes Submerged	No
Flow Present	No
Structure Notes	Design plans needed to understand the depth of the structure.

Physical Indicators

Floatables	Yes
Floatables Type	Oil
Odor	No
General Notes	Clean floatables per O&M plan. Culvert has flow meter.

Surface Photos

Interior Photos

Other Photos

OF-300, SWMH-254

Project	MVGP - 10/05 - Friday
Created	2023-03-30 18:52:10 UTC by EPField 01
Updated	2023-03-30 19:10:32 UTC by EPField 01
Location	42.1040865, -71.1278852

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-254
Structure Type	Manhole
Outfall ID	OF-300
Date	2023-03-30
Time	14:52
Address	77 Grace Lane Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	162

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	162

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	105

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	164
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

outfall

OF-754, SWMH-1695

Created	2023-04-04 18:31:03 UTC by EPField 01
Updated	2023-04-04 18:41:04 UTC by EPField 01
Location	42.1355431, -71.0764532

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1695
Structure Type	Manhole
Outfall ID	OF-754
Date	2023-04-04
Time	14:31
Address	1050 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	34

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	33
Pipe Notes	2 outgoing pipes at 6:00

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	31
Pipe Notes	2 pipes at 10:00

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	31
Pipe Notes	2 pipes at 5:00
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
General Notes	Vortechnics structures should be cleaned. Refer to O&M to cleaning schedule. The structures are located in front of the Metropolitan Trucking Center Inc. building on 1074 Turnpike St.
Surface Photos	 

Interior Photos

Other Photos

OF-265, SWMH-392

Created	2023-03-23 16:51:29 UTC by EPField 01
Updated	2023-03-23 16:59:22 UTC by EPField 01
Location	42.113115086890254, -71.06596071027157

Background Data

Client	Town of Stoughton
EP Representatives	Mike Franck, Annie Tucker
Structure ID	SWMH-392
Structure Type	Manhole
Outfall ID	OF-265
Date	2023-03-23
Time	12:51
Address	212–224 Shuman Ave Stoughton, MA 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	55

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	55

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	53

Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-65, SWMH-1235

Created	2023-04-25 13:49:15 UTC by EPField 01
Updated	2023-04-27 15:23:10 UTC by EPField 01
Location	42.1298225, -71.1314595

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1235
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-25
Time	09:49
Address	1800 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	166

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	166

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	165

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	10
Pipe Invert (inches)	76

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	8
Pipe Invert (inches)	85

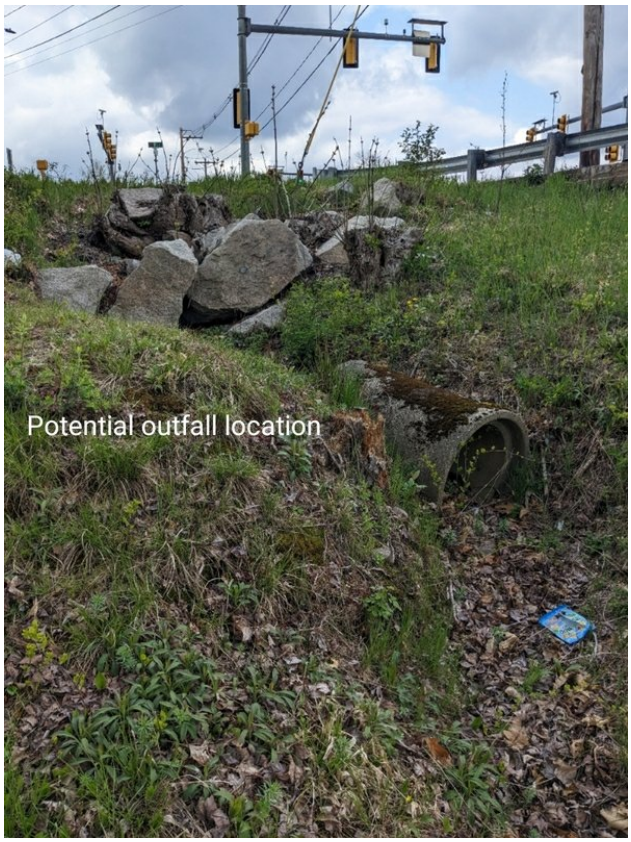
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos



OF-112, SWMH-108

Project	MVGP - 10/05 - Friday
Created	2023-04-10 18:56:40 UTC by EPField 01
Updated	2023-04-10 19:10:39 UTC by EPField 01
Location	42.1030721, -71.0799706

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-108
Structure Type	Manhole
Outfall ID	OF-112
Date	2023-04-10
Time	14:56
Address	180 Chase Run Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	72

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	74

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	71
Pipe Notes	Trickling

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	61
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	3

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-65, SWMH-NEW

Created	2023-04-27 14:56:40 UTC by EPField 01
Updated	2023-04-27 15:21:43 UTC by EPField 01
Location	42.1305602, -71.1301458

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-NEW
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-27
Time	10:56
Address	1783 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	56

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	45

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	8
Pipe Invert (inches)	45

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	8
Pipe Invert (inches)	45
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No

General Notes	Pipes from catch basin are dual pipes.

Surface Photos

Interior Photos

Other Photos

OF-380, SWMH-349

Project	MVGP - 10/05 - Friday
Created	2023-03-31 17:20:12 UTC by EPField 01
Updated	2023-03-31 17:36:13 UTC by EPField 01
Location	42.1094916, -71.1027512

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-349
Structure Type	Manhole
Outfall ID	OF-380
Date	2023-03-31
Time	13:20
Address	47 Holland Avenue Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	56

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	50

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49.5

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12

Pipe Invert (inches)	47
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	7

Physical Indicators

Floatables	No
Odor	No

Pipe, 7

Sampling Location	Pipe
Pipe Clock Position	7

Field Kits

Temperature	54.5
pH	6.04
Specific Conductivity (SPC)	340
Surfactants	0.25
Chlorine	0.11
Ammonia	0
General Notes	Grate and rim on SWIN-504 needs to be replaced
Surface Photos	

Interior Photos

OF-356, SWMH-2036

Created	2023-04-04 13:32:03 UTC by EPField 01
Updated	2023-04-04 13:42:23 UTC by EPField 01
Location	42.1555172, -71.065513

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2036
Structure Type	Manhole
Outfall ID	OF-356
Date	2023-04-04
Time	09:32
Address	301 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	52

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry. Large deposits in the manhole

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-809, SWMH-1796

Created	2023-04-04 17:17:48 UTC by EPField 01
Updated	2023-04-04 17:21:07 UTC by EPField 01
Location	42.1400633, -71.0766972

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1796
Structure Type	Manhole
Outfall ID	OF-809
Date	2023-04-04
Time	13:17
Address	1151 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	52

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	52

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	35

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	36
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-380, SWMH-348

Created	2023-03-31 17:02:26 UTC by EPField 01
Updated	2023-03-31 17:08:19 UTC by EPField 01
Location	42.1091689, -71.1010556

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-348
Structure Type	Manhole
Outfall ID	OF-380
Date	2023-03-31
Time	13:02
Address	27 Smyth Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	61

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	52

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	46
Pipes Submerged	Partially
Submerged Pipes	7 and 9
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

OF-330, SWIN-3009

Created	2023-04-10 13:08:35 UTC by EPField 01
Updated	2023-04-10 13:10:59 UTC by EPField 01
Location	42.1573099, -71.0642849

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3009
Structure Type	Catch Basin
Outfall ID	OF-330
Date	2023-04-10
Time	09:08
Address	406 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	67

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	0
Pipe Notes	There is a hood on the pipe
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-807, SWMH-112

Created	2023-04-10 19:41:57 UTC by EPField 01
Updated	2023-04-10 19:45:06 UTC by EPField 01
Location	42.1011987, -71.079098

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-112
Structure Type	Manhole
Outfall ID	OF-807
Date	2023-04-10
Time	15:41
Address	20 Dennison Court Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	61

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	51

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	50

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-359, SWIN-3231

Created	2023-04-10 14:21:36 UTC by EPField 01
Updated	2023-04-10 14:26:45 UTC by EPField 01
Location	42.1525327, -71.06586

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-3231
Structure Type	Catch Basin
Outfall ID	OF-359
Date	2023-04-10
Time	10:21
Address	501 Technology Center Drive Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	66

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	0
Pipe Notes	There is a hood on the pipe
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is full of standing water

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

OF-463, SWMH-123

Created	2023-04-03 17:27:51 UTC by EPField 01
Updated	2023-04-03 17:34:54 UTC by EPField 01
Location	42.1082203, -71.0912539

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-123
Structure Type	Manhole
Outfall ID	OF-463
Date	2023-04-03
Time	13:27
Address	143 Ryan Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	74

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	74

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	68

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65

Pipes Submerged	Partially
Submerged Pipes	6:00
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
General Notes	Erosion around the outfall. The pipe segment is dislodged.
Surface Photos	

Interior Photos

Other Photos

OF-809, SWMH-1792

Created	2023-04-04 17:27:32 UTC by EPField 01
Updated	2023-04-04 17:33:33 UTC by EPField 01
Location	42.1394914, -71.0766868

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1792
Structure Type	Manhole
Outfall ID	OF-809
Date	2023-04-04
Time	13:27
Address	1140 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	58

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	DIP
Pipe Diameter (inches)	15
Pipe Invert (inches)	50

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	50

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	52

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	Unknown
Pipe Diameter (inches)	8
Pipe Invert (inches)	51

Pipe Notes	Capped with bricks

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	48
Pipes Submerged	Partially
Submerged Pipes	All
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

OF-804, SWMH-560

Project	MVGP - 10/05 - Friday
Created	2023-03-21 19:06:26 UTC by EPField 01
Updated	2023-03-21 19:10:51 UTC by EPField 01
Location	42.0775538, -71.1317002

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-560
Structure Type	Manhole
Outfall ID	OF-804
Date	2023-03-21
Time	15:06
Address	150 Eagle Rock Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	45

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	51

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	0

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	unknown
Pipe Diameter (inches)	0
Pipe Invert (inches)	0
Pipe Notes	Unable to see pipe well

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP

Pipe Diameter (inches)	12
Pipe Invert (inches)	0
Pipes Submerged	Partially
Submerged Pipes	All
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

OF-NEW, SWMH-1789

Created	2023-04-04 14:35:23 UTC by EPField 01
Updated	2023-04-04 17:21:47 UTC by EPField 01
Location	42.1431964, -71.0772152

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1789
Structure Type	Manhole
Outfall ID	OF-NEW
Date	2023-04-04
Time	10:35
Address	970 Pleasant Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	61

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	49
Pipe Notes	Outlet is filled with debris

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	51
Pipe Notes	Pipe is filled with debris

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	10
Pipe Invert (inches)	37

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	DIP

Pipe Diameter (inches)	15
Pipe Invert (inches)	50
Pipes Submerged	Partially
Submerged Pipes	6:00 and 10:00
Flow Present	Yes
Flow Description	Trickle
Flow Source	2:00; trickle but not enough to sample
Structure Notes	Debris found in outgoing 6:00 and incoming 10:00 pipes

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos


Outfall from BMP, located upstream

OF-616, SWMH-2041

Created	2023-04-04 18:56:08 UTC by EPField 01
Updated	2023-04-04 19:00:37 UTC by EPField 01
Location	42.134405, -71.0758561

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-2041
Structure Type	Manhole
Outfall ID	OF-616
Date	2023-04-04
Time	14:56
Address	1072 Turnpike Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning of floatables
Manhole Invert (inches)	60

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	33
Pipe Notes	2 outgoing pipes

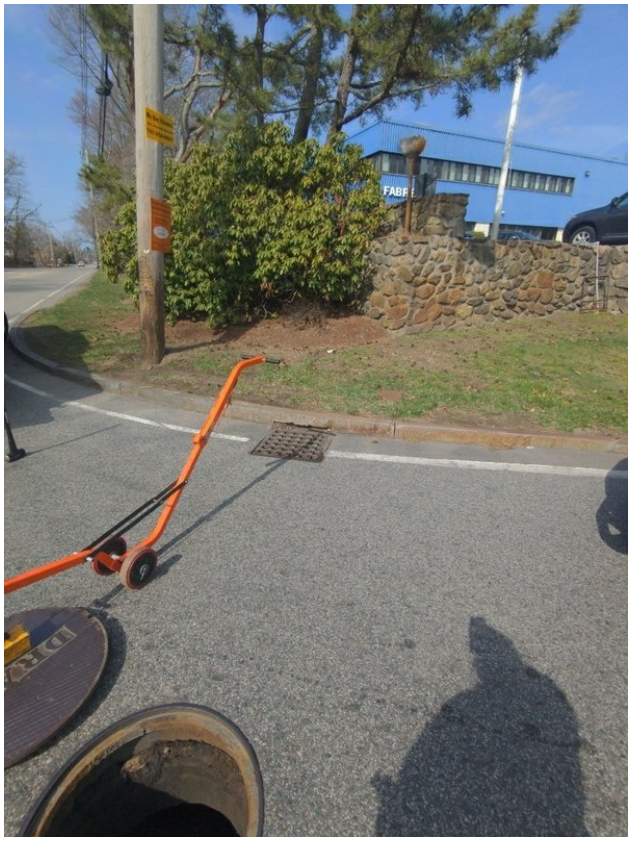
2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	DIP
Pipe Diameter (inches)	8
Pipe Invert (inches)	34
Pipe Notes	2 incoming 2:00 pipes
Pipes Submerged	Partially
Submerged Pipes	All
Flow Present	No
Structure Notes	Standing water is present

Physical Indicators

Floatables	Yes
Floatables Type	Oil
Odor	No
General Notes	Both the outgoing and incoming pipes have deposits and should be cleaned.

Surface Photos



Interior Photos

OF-60, SWMH-307

Project	MVGP - 10/05 - Friday
Created	2023-03-30 13:48:14 UTC by EPField 01
Updated	2023-03-30 14:07:44 UTC by EPField 01
Location	42.1089621, -71.1110891

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-307
Structure Type	Manhole
Outfall ID	OF-60
Date	2023-03-30
Time	09:48
Address	30 Jeffrey Way Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	70

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	71

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	69.5
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	10

Physical Indicators

Floatables	No
Odor	No

Pipe, 10

Sampling Location	Pipe
Pipe Clock Position	10

Field Kits

Temperature	51.4
pH	7.54
Specific Conductivity (SPC)	689
Surfactants	0.5
Chlorine	0.02
Ammonia	0
Surface Photos	

Interior Photos

OF-463, SWMH-124

Created	2023-04-03 17:43:20 UTC by EPField 01
Updated	2023-04-04 12:45:17 UTC by EPField 01
Location	42.109831, -71.0894476

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-124
Structure Type	Manhole
Outfall ID	OF-463
Date	2023-04-03
Time	13:43
Address	63 Ryan Road Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	No
Manhole Invert (inches)	60

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	59

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry

Physical Indicators

Floatables	No
Odor	No
General Notes	Manhole cover says SEWER.
Surface Photos	


SEWER

Interior Photos

OF-65, SWMH-1232

Created	2023-04-25 13:11:10 UTC by EPField 01
Updated	2023-04-27 15:25:47 UTC by EPField 01
Location	42.1306668, -71.1311565

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWMH-1232
Structure Type	Manhole
Outfall ID	OF-65
Date	2023-04-25
Time	09:11
Address	1810 Central Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Debris and bricks found at the bottom of the structure. Cleaning recommended.
Manhole Invert (inches)	89

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	90

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	87

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	89
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is dry but lots of debris and bricks at the bottom of the structure

Physical Indicators

Floatables	No

Odor	No
General Notes	Confirm with Town if 9:00 incoming pipe is abandoned.
Surface Photos	
Interior Photos	

Other Photos

OF-NEW, SWIN-2997

Created	2023-04-27 13:50:55 UTC by EPField 01
Updated	2023-04-27 13:55:30 UTC by EPField 01
Location	42.1432107, -71.0647029

Background Data

Client	Town of Stoughton
EP Representatives	Annie Tucker, Karen Chan
Structure ID	SWIN-2997
Structure Type	Catch Basin
Outfall ID	OF-NEW
Date	2023-04-27
Time	09:50
Address	104 Page Street Stoughton, Massachusetts 02072

Structure Information

Maintenance Required	Yes
Maintenance Needs	Cleaning. Floatables observed
Manhole Invert (inches)	63
Pipes Submerged	Fully
Flow Present	No
Structure Notes	Unable accurate readings on pipe details. Mapping seems accurate; Town to assist in locating outfall

Physical Indicators

Floatables	Yes
Floatables Type	Trash and oils
Floatables Note	Cleaning recommended
Odor	No
General Notes	Cannot locate outfall.

Surface Photos

Interior Photos

APPENDIX F

System Vulnerability Factor (SVF) Inventory

Table 3: Outfall-Catchment System Vulnerability Factor (SVF) Inventory
Stoughton, Massachusetts

			Required Factors								Recommended Factors		
Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	**SVF Identified**
OF-105	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-105A(NEW)	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-105B(NEW)	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-109	81 D Street	Unnamed Wetlands to Beaver Brook 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-112	180 Chase Run	Unnamed Tributary near Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-113	96 Daly Drive	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-192	63 York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-194	Intersection of Meadowbrook Lane and York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-195	Intersection of Meadowbrook Lane and York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-204	22 Palisades Circle	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-207	450 Highland Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-211	524 Highland Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-217	42 Ash Park Drive	Unnamed Tributary to Beaver Brook 6	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-243	261 William Kelley Road	Unnamed Wetlands to Beaver Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-251	52 Jordan Drive	Unnamed Tributary to Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-265(NEW)	100 Campanelli Parkway	Lovett Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-300	76 Grace Lane	Plain Street Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-304	951 Pleasant Street	Unnamed Tributary To Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-322	166 Kotilk Street	Woods Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-323	98 Kotilk Street	Unnamed Tributary to Steep Hill Brook 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-330	100 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-331	100 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-342	10 Oliver Lane	Unnamed Tributary to Town Pond 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-350	24 Dino Drive	Unnamed Tributary to Steep Hill Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-354	301 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-355	301 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-356	301 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-357	501 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-358	501 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**

Table 3: Outfall-Catchment System Vulnerability Factor (SVF) Inventory
Stoughton, Massachusetts

Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	**SVF Identified**
OF-359	501 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-362	601 Technology Center Drive	Unnamed Wetlands to Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-378	769 Highland Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-380	20 Smyth Street	Unnamed Tributary to Dorchester Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-399	30 Turnstone Terrace	Briggs Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-419	70 Drinkwater Avenue	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-453	129 Swanson Terrace	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-458	111 East Vanston Road	Unnamed Tributary to Beaver Brook 3	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-459	71 East Vanston Road	Unnamed Tributary to Beaver Brook 3	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-463	143 Crockett Street	Unnamed Tributary to Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-464	35 Crockett Street	Unnamed Tributary to Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-468	20 Turnstone Terrace	Briggs Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-478	215 Woodpecker Road	Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-492	1074 Turnpike Street	Unnamed Tributary To Beaver Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-516	3 Sumner Street	Unnamed Tributary to Beaver Brook 6	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-54	125 Atkinson Avenue	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-55	107 Atkinson Avenue	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-553	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553O-1 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-1 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-2 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-3 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-4 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-5 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-553S-6 (NEW)	1782 West Street	Ames Long Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-56	11 Daly Drive Extension	Dorchester Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-560(NEW)	144 West Street	Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-560S(NEW)	144 West Street	Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-57	1493 Morton Street	Unnamed Tributary to Dorchester Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-580	92 Tremont Street	Unnamed Tributary to Steep Hill Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-59	41 Jeffery Way	Unnamed Tributary near Woods Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-60	30 Jeffery Way	Unnamed Tributary near Woods Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-612	1749 Central Street	Unnamed Tributary (MA73-32)	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-616	1023 Turnpike Street	Beaver Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-64	1810 Central Street	Unnamed Tributary to Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-641	45 Kwedar Avenue	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-643	18 Fitzpatrick Street	Coweeset Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-65	1810 Central Street	Unnamed Tributary (MA73-32)	No	No	No	No	No	No	N/A	No	No	No	**NO**

Table 3: Outfall-Catchment System Vulnerability Factor (SVF) Inventory
Stoughton, Massachusetts

Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	**SVF Identified**
OF-653	33 Kwedar Avenue	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-669	951 Pleasant Street	Unnamed Tributary To Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-671	92 Tremont Street	Unnamed Tributary to Steep Hill Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-69	23 Plain Drive	Plain Street Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-694	951 Pleasant Street	Unnamed Tributary To Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-70	32 Kwedar Avenue	Unnamed Tributary to Town Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-710	Intersection of Central Street and Old South Street	Unnamed Wetlands near Lovett Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-723	21 Plain Street	Unnamed Pond near Woods Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-735	358-366 Island Street	East Branch Neponset River	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-739	104 Page Street	Unnamed Pond near Three Swamp Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-742	1749 Central Street	Unnamed Tributary to Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-743	63 Central Street	Unnamed Wetlands near Lovett Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-744	63 Central Street	Unnamed Wetlands near Lovett Brook 2	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-747	2050 Central Street	Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-748	2070 Central Street	Steep Hill Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-751	1027 Sumner Street	Coweeset Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-754	1050 Turnpike Street	Unnamed Tributary To Beaver Brook	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-759	155 York Street	Beaver Meadow Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-764	1361 Bay Road	Dry Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-769	1154 Bay Road	Town Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-788	160 Larson Road	Brockton Reservoir	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-792	G2 Central Drive	Cochato River	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-801	3 Sumner Street	Unnamed Tributary to Beaver Brook 6	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-803	170 Eagle Rock Road	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-804	150 Eagle Rock Road	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-805	128 Eagle Rock Road	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-807	20 Dennison Court	Unnamed Tributary	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-809	1140 Old Maple Street	Beaver Brook	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-812 (NEW)	1098 Turnpike Street	Unnamed Tributary to Beaver Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**
OF-813 (NEW)	20 Maple Street	Unnamed Tributary to Beaver Pond	No	No	No	No	No	No	N/A	No	No	No	**NO**
OF-98	146 Shuman Avenue	Unnamed Wetlands near Lovett Brook 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	**NO**

Presence/Absence Evaluation Criteria:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
2. Common or twin-invert manholes serving storm and sanitary sewer alignments
3. Common trench construction serving both storm and sanitary sewer alignments
4. Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
5. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
6. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
7. Areas formerly served by combined sewer systems
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations
9. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs

OPTIONAL FACTORS

10. 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 that poor owner maintenance)
11. 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 that poor owner maintenance)

APPENDIX G

New England Interstate Water Pollution Control Commission

IDDE Manual

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities

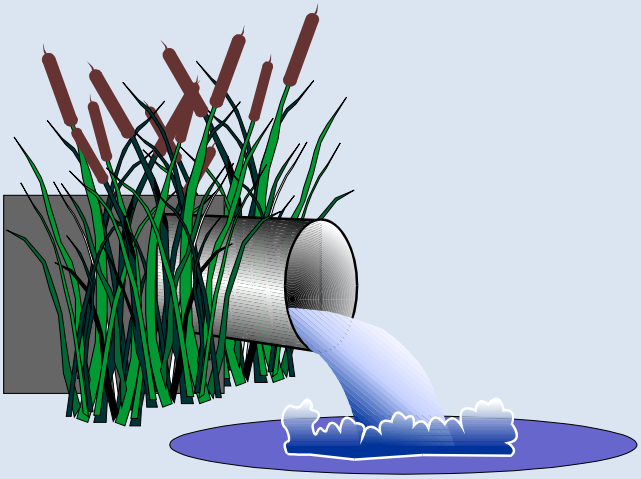
NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

January 2003

This page is intentionally blank.

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities



Prepared by the

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

Boott Mills South

100 Foot of John Street

Lowell, Massachusetts 01852

Ronald F. Poltak, *Executive Director*

COMPACT MEMBER STATES

Connecticut
Maine
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

Copies of this document may be downloaded from *www.neiwpcc.org.*

January 2003

ACKNOWLEDGEMENTS

This manual was developed by the New England Interstate Water Pollution Control Commission (NEIWPCC). NEIWPCC is a nonprofit interstate agency, established by an Act of Congress in 1947, that serves its member states (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) by providing coordination, public education, training, and leadership in the management and protection of water quality.

This project was initiated by NEIWPCC's Storm Water Workgroup, which is composed of state and federal environmental agency staff. The group perceived a need for resources to help municipalities in NEIWPCC-member states that are regulated under the U.S. Environmental Protection Agency's (EPA's) Phase II storm water program comply with regulatory requirements. This manual is intended to help municipalities develop illicit discharge detection and elimination programs—one of the six minimum control measures under Phase II.

This manual was made possible by a grant from the U.S. Environmental Protection Agency. The contents do not necessarily reflect the views and policies of EPA or NEIWPCC's member states, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

This manual was compiled and written by Rebekah Lacey, with assistance from Kim Starbuck and other NEIWPCC staff. Editing, graphic design, and layout were performed by Ellen Frye and Ricki Pappo of ENOSIS. Thelma Murphy served as the EPA Project Officer. NEIWPCC would like to thank Andrea Donlon, NHDES, for her many contributions to this document, which included providing information, comments, and photographs—most of the photographs in the manual were either provided by Andrea or taken by NEIWPCC staff while accompanying Andrea on field work.

NEIWPCC would also like to thank the following people who contributed their time in providing information for and/or reviewing the manual:

Interviews or Other Information

Kathy Baskin, Charles River Watershed Association
Paul Barden, BWSC
Michael Cuneo, Town of Dedham, MA
Andrea Donlon, NHDES
Tim Grover, City of Winooski, VT
Charlie Jewell, BWSC
Natalie Landry, NHDES
Ginny Scarlet, MADEP

Review

Jeff Andrews, NHDES
Andrea Donlon, NHDES
Bryant Firmin, MADEP
Greg Goblick, RIDEM
Tim Grover, City of Winooski, VT
David Ladd, MEDEP
Steve Lipman, MADEP
Thomas Mahin, MADEP
Thelma Murphy, USEPA
Jim Pease, VTDEC
Ginny Scarlet, MADEP
Chris Stone, CTDEP

CONTENTS

ACRONYMS

BMP	Best Management Practice
BWSC	Boston Water and Sewer Commission
GIS	Geographic Information System
GPS	Global Positioning System
IDDE	Illicit Discharge Detection and Elimination
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
SIC	Standard Industrial Classification

EPA	U.S. Environmental Protection Agency
CTDEP	Connecticut Department of Environmental Protection
MEDEP	Maine Department of Environmental Protection
MADEP	Massachusetts Department of Environmental Protection
NHDES	New Hampshire Department of Environmental Services
NYSDEC	New York State Department of Environmental Conservation
RIDEM	Rhode Island Department of Environmental Management
VTDEC	Vermont Department of Environmental Conservation

This page is intentionally blank.

INTRODUCTION

Although the quality of the nation's waters has improved greatly since the passage of the Clean Water Act in 1972, many water bodies are still impaired by pollution. According to the U.S. Environmental Protection Agency's (EPA's) 2000 National Water Quality Inventory, 39 percent of assessed river and stream miles, 46 percent of assessed lake acres, and 51 percent of assessed estuarine square miles do not meet water quality standards. The top causes of impairment include siltation, nutrients, bacteria, metals (primarily mercury), and oxygen-depleting substances. Polluted storm water runoff, including runoff from urban/suburban areas and construction sites, is a leading source of this impairment. To address this problem, EPA has put into place a program that regulates certain storm water discharges.

Polluted storm water runoff, including runoff from urban/suburban areas and construction sites, is a leading source of water quality impairment. To address this problem, EPA has put into place a program that regulates certain storm water discharges.

In 1990, EPA promulgated Phase I of its storm water program under the National Pollutant Discharge Elimination System (NPDES) permit provisions of the Clean Water Act. Phase I addressed storm water runoff from "medium" and "large" municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or greater, construction activity that would disturb five or more acres of land, and 10 categories of industrial activity. To further reduce the adverse effects of storm water runoff, EPA instituted its Storm Water Phase II Final Rule on December 8, 1999.

WHO ADMINISTERS THE PHASE II STORM WATER PROGRAM?

The Phase II storm water program is part of EPA's NPDES program, which in many states is delegated to state authorities to administer. Connecticut, Maine, New York, Rhode Island, and Vermont are authorized to serve as NPDES permitting authorities. EPA Region 1 serves as the permitting authority for Massachusetts and New Hampshire. EPA is also the permitting authority for all federally recognized Indian Country lands and for federal facilities in Massachusetts, New Hampshire, and Vermont.

WHAT IS REGULATED UNDER PHASE II?

Phase II regulates discharges from small MS4s located in "urbanized areas" (as delineated by the Census Bureau in the most recent census) and from additional small MS4s designated by the permitting authority. Phase II also regulates construction activities that would disturb between one and five acres of land. In addition, the Phase II Final Rule ends the temporary exemption from Phase I requirements for some municipally operated industrial activities[1] and revises the "no exposure" provision for Phase I-regulated industrial activities.

MS4s are typically operated by municipalities, but the Phase II definition of "municipal separate storm sewer systems" includes storm sewer systems owned or operated by other public bodies (e.g., states, counties, Indian tribes, departments of transportation, universities). EPA also notes that an MS4 is not always just a system of underground pipes; it can include roads with drainage systems, gutters, and ditches.

[1] This temporary exemption was provided by the Intermodal Surface Transportation Act (ISTEA) of 1991.

The rules for determining which small MS4s are regulated under Phase II are somewhat complex; MS4 operators should consult the NPDES permitting authority for their state to determine whether their MS4s are regulated. Note also that requirements may be different if a municipality is located only partially within an urbanized area.

WHERE DOES IDDE FIT IN?

EPA's Phase II rule specifies that permitting authorities must issue general permits for "automatically designated" small MS4s by December 9, 2002. The rule requires that operators of these automatically designated small MS4s apply for NPDES permit coverage within 90 days of permit issuance, and no later than March 10, 2003[2]. To obtain this coverage, an MS4 operator must develop, implement, and enforce a storm water management program that is designed to reduce the discharge of pollutants to the maximum extent practicable, protect water quality, and satisfy the applicable water quality requirements of the Clean Water Act. EPA's Storm Water Phase II Final Rule states that this storm water management program must include the following six minimum control measures:

- Public education and outreach on storm water impacts
- Public involvement and participation
- ➤ **Illicit discharge detection and elimination (IDDE)**
- Construction site storm water runoff control
- Post-construction storm water management in new development and redevelopment
- Pollution prevention and good housekeeping for municipal operations

As part of their applications for permit coverage, MS4 operators must identify the best management practices they will use to comply with each of the six minimum control measures and the measurable goals they have set for each measure.

ABOUT THIS MANUAL

This manual is intended to help municipalities in the New England states and New York develop illicit discharge detection and elimination (IDDE) programs required by EPA's Phase II storm water program. EPA's Phase II storm water regulations provide guidelines that are used by permitting authorities in writing their permits. This manual provides general information based on EPA's Phase II storm water regulations; it is important to consult the permitting authority in your state (see Chapter 10) to find out about state-specific requirements.

EPA's Phase II storm water regulations provide guidelines that are used by permitting authorities in writing their permits. This manual provides general information based on EPA's Phase II storm water regulations; it is important to consult the permitting authority in your state to find out about state-specific requirements.

Chapter 1 explains the IDDE requirement of EPA's Phase II regulations. Chapters 2 through 8 describe the required elements of an IDDE program and provide information to help municipalities execute each of these elements. Chapter 9 provides information on best management practices and measurable goals for IDDEs. Chapter 10 lists additional resources and contacts that may be helpful in developing an IDDE program.

[2] There are some exceptions to this deadline; contact the permitting authority in your state for up-to-date official information.

1 GETTING STARTED WITH YOUR IDDE PROGRAM

As you set out to develop your illicit discharge detection and elimination (IDDE) program, you will need to start by making sure that you know the answers to two key questions: (1) What is an illicit discharge? and (2) What are the required elements of an IDDE program? In this chapter we'll review the answers to these questions; we'll provide supporting information and details in subsequent chapters.

WHAT IS AN ILLICIT DISCHARGE?

The term "illicit discharge" is defined in EPA's Phase II storm water regulations as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to an NPDES permit and discharges resulting from fire-fighting activities."

Illicit discharges can be categorized as either direct or indirect.

- Examples of direct illicit discharges:
  - sanitary wastewater piping that is directly connected from a home to the storm sewer
  - materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin
  - a shop floor drain that is connected to the storm sewer
  - a cross-connection between the municipal sewer and storm sewer systems
- Examples of indirect illicit discharges:
  - an old and damaged sanitary sewer line that is leaking fluids into a cracked storm sewer line
  - a failing septic system that is leaking into a cracked storm sewer line or causing surface discharge into the storm sewer

Illicit discharge

Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to an NPDES permit and discharges resulting from fire-fighting activities.

WHAT ARE THE ELEMENTS OF AN IDDE PROGRAM?

EPA's Phase II regulations state that an IDDE program must incorporate the following four elements.

- Develop (if not already completed) a storm sewer system map showing the location of all outfalls, and the names and location of all waters of the United States that receive discharges from those outfalls.

NON-STORM WATER DISCHARGES THAT YOUR IDDE PROGRAM MAY NOT NEED TO ADDRESS

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

- water line flushing
- landscape irrigation
- diverted stream flows
- rising ground waters
- uncontaminated ground water infiltration
- uncontaminated pumped ground water
- discharges from potable water sources
- foundation drains
- air conditioning condensation
- 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

- To the extent allowable under state, tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the separate storm sewer system and implement appropriate enforcement procedures and actions as needed.
- Develop and implement a plan to detect and address illicit discharges, including illegal dumping, to the system.
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

For each of these mandatory elements, EPA suggests a variety of approaches that can help in creating a successful IDDE program. The mandatory elements and the suggested approaches will be discussed further in the next seven chapters.

REFERENCES: CHAPTER 1

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.5: *Illicit Discharge Detection and Elimination Minimum Control Measure.* EPA 833-F-00-007. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

2 DEVELOPING A STORM SEWER MAP

The creation of a storm sewer map is the first mandatory element of an IDDE program. Phase II requires that the operator of a regulated MS4 develop a map of the MS4 that shows, at a minimum, the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls. While many municipalities in the Northeast already have detailed maps of their storm sewer systems, others, typically those in older or more rural areas, have the information scattered in different locations. These municipalities will have the most work to do to comply with this requirement. If you need to develop a map, begin by collecting any existing information on outfall locations (e.g., review city records, drainage maps, storm drain maps, state or federal storm water permit files, state transportation maintenance maps), and then conduct field surveys to verify the locations.

CONDUCTING A FIELD SURVEY

A field survey of outfall locations will often be necessary to create a map or verify and update an existing map. The References section at the end of the chapter provides a Web link for a sample guide for conducting a storm drain mapping survey (MA DFWELE, 2002). Field outfall surveys generally include the following basic steps:

- Survey receiving waters on foot or by boat to look for all outfalls (i.e., wade small receiving waters or use a boat for larger receiving waters).
- Note the locations of outfalls on a map. The map scale should be such that outfalls can be located accurately.
- Assign a code or label to each outfall. Adopt a logical, easy-to-understand system (e.g., distance along the stream).
- Fill out a survey sheet for each outfall, noting characteristics such as dry weather discharge and deposits or stains.

The goal of a mapping program should be functionality—find a way to map outfalls such that you (and the permitting authority) can locate any specific outfall to check on discharges.

MAPPING OPTIONS

For municipalities that do not already have a storm sewer map, it is important to determine the type of map (e.g., topographic, hand or computer drafted) that best fits your needs. Because there is no specific mapping standard in the Phase II rule, the goal of a mapping program should be functionality—find a way to map outfalls such that you

CAN A DITCH BE AN OUTFALL?

The paragraph below is an excerpt from EPA's Storm Water Phase II Final Rule (USEPA, 1999).

The term "outfall" is defined in 40 CFR 122.26(b)(9) as "a point source at the point where a municipal separate storm sewer discharges to waters of the United States." The term "municipal separate storm sewer" is defined at 40 CFR 122.26(b)(8) as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)." Following the logic of these definitions, a "ditch" may be part of the municipal separate storm sewer, and at the point where the ditch discharges to waters of the United States, it is an outfall. As with any determination about jurisdictional provisions of the CWA, however, final decisions require case-specific evaluations of fact.

(and the permitting authority) can locate any specific outfall to check on discharges. The most basic way to meet the mapping requirement is to use an existing map (e.g., a topographic map) that shows receiving waters. You can then mark outfall locations on the map by hand (using existing information augmented by a field survey). Make sure the names of receiving waters are shown on the map; for receiving waters that don't have names, it is helpful to indicate the nearest named water body downstream. The graphic at the beginning of this chapter shows an example of a marked-up United States Geological Survey map (markings do not represent actual outfalls). The next step up is a more sophisticated paper map (e.g., blueprint-style). Figure 1 presents an example of a simple paper map showing outfalls and other key features of the storm sewer system.

In many municipalities, a paper map may be completely adequate for carrying out an IDDE program. However, if your MS4 has the resources, or if your municipality has a complex storm sewer system, you may want to make use of available computer technology in making your map.

Global Positioning System (GPS) technology can be used to obtain the coordinates (longitude and latitude) for each outfall. A GPS unit, which uses data from the U.S. Department of Defense's constellation of GPS satellites to constantly update position, can be carried with you on your field survey. A particular position can be recorded and later downloaded into a Geographic Information System (GIS) database. Using GIS, the coordinates can be linked with other site-specific information, such as a picture and history of the outfall. GPS units can be purchased or rented.

There are various computerized mapping programs. A GIS program (e.g., ArcGIS) combines a georeferenced database with mapping capability, so that different geographical attributes (e.g., streets, outfalls, land use, monitoring data) can be mapped as

"layers" and displayed either separately or together. AutoCAD®, a design/drafting platform, is another program commonly used for storm sewer mapping.

If you plan to map via computer, decide if you want to make the mapping system compatible with other departments within your municipality and/or with other data sources (e.g., state agencies that provide GIS layers). Since storm sewer systems are often constructed in roadways, the use of the GIS road line data layer can be helpful in developing a map. If this layer is available, it is usually very accurate and frequently updated by state or regional agencies. Local or regional planning commissions may be able to provide assistance with GIS technology and map development. Once a particular software system has been chosen, it is helpful to require developers to submit compatible electronic updates for subsequent development to ensure that the map and data remain current after the initial mapping effort is finished.

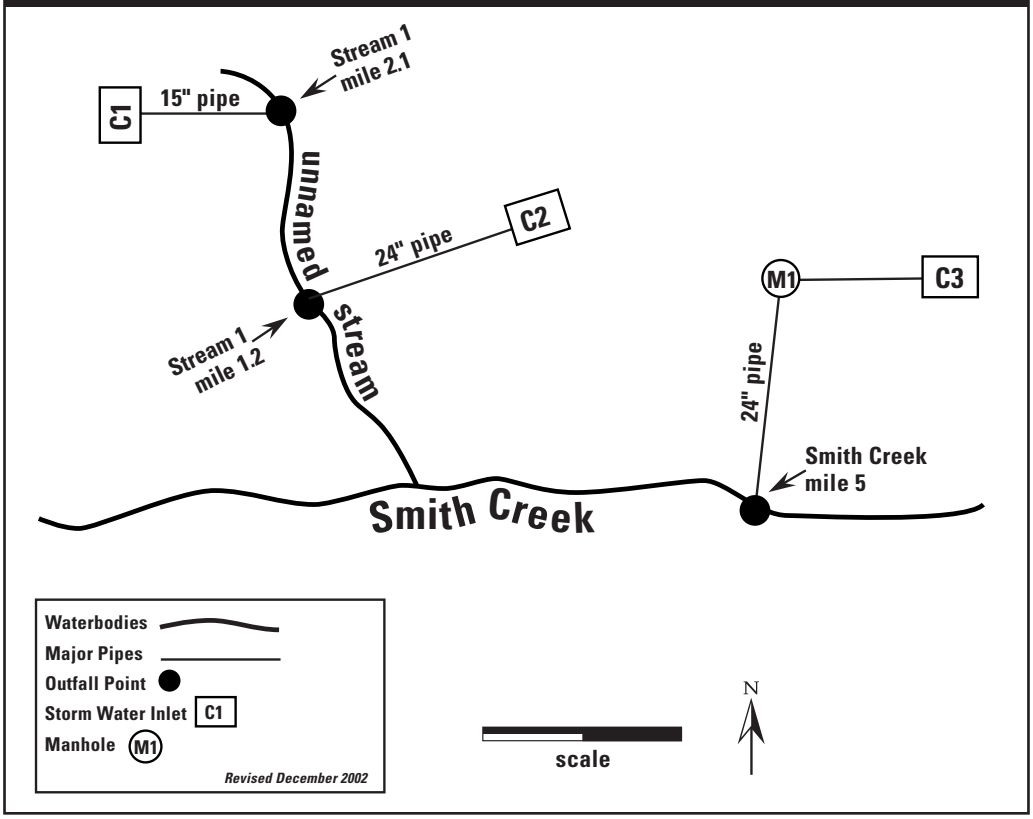
PRIORITIZING AREAS TO BE MAPPED

You may find that practical considerations will dictate the need to conduct mapping in phases. In this case, it is best to prioritize your mapping agenda. For example, older developed areas are more likely to have illicit discharges than newer areas for various reasons (e.g., many municipalities have imposed inspection requirements on new construction that help to prevent illegal connections). Therefore, if your community has limited resources, you would benefit from mapping the older areas first to ensure that priority areas are mapped.

You may find that practical considerations will dictate the need to conduct mapping in phases. In this case, it is best to prioritize your mapping agenda.

Other considerations in setting mapping priorities include land uses, reports of illicit discharges, and other information specific to each MS4. Although EPA's Phase II regulations require that only outfalls be mapped, once an illicit discharge is detected at an outfall, it may be necessary to map the portion of the storm sewer system leading to the outfall so that you are able to locate the source of the discharge. If possible, mapping the entire storm sewer system may prove very helpful to your IDDE program.

Figure 1 SAMPLE MAP



REFERENCES: CHAPTER 2

Colorado Department of Public Health and Environment, Water Quality Control Division. 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal stormwater discharge permit.* *http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html*

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. 2002. *Storm Drain Mapping Project Field Manual* (Draft). *http://www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

Oakland County, Michigan. 2002. *Illicit Discharge Elimination Program.* *http://www.co.oakland.mi.us/drain/program_service/illicit_disch.html*

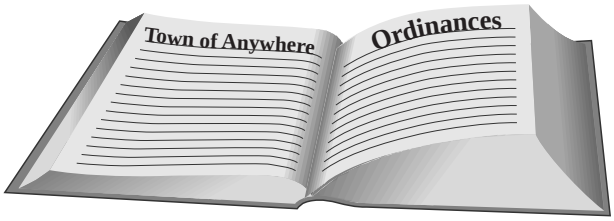
Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238. *http://www.epa.gov/clariton*

Rohrer, C.A., and Beckley, R.J. Undated. *Using GIS Tools to Implement an Illicit Discharge Elimination Program in Livonia, Michigan.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

3 PROHIBITING ILLICIT DISCHARGES

The second mandatory element of a Phase II IDDE program requires that MS4 operators "to the extent allowable under State, Tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the separate storm sewer system and implement appropriate enforcement procedures and actions as needed."



ILLICIT DISCHARGE ORDINANCES

As EPA's guidance specifies, a municipal ordinance created to comply with Phase II regulations must include a *prohibition* of illicit discharges and an *enforcement* mechanism. Note that it is also essential for the municipality to establish legal authority to inspect properties suspected of releasing contaminated discharges into the storm sewer system. Your municipality may already have a sewer use ordinance or similar bylaw that meets Phase II requirements, or that can be amended to meet the requirements. Consult with your town counsel and other municipal authorities to review your town's existing bylaws and regulations and determine what changes or additions are needed and what the procedure is for making those changes. If you need to make changes, you may want to review the model bylaws and other guidance discussed below.

EPA's nonpoint source pollution program Web site offers several examples of local ordinances for illicit discharges (USEPA, 2002). Appendix A of this manual presents EPA's general model ordinance, which synthesizes a number of existing municipal ordinances. In using any of these ordinances as a model, a community should take into account the legal authority granted to it under state law, the Phase II permit requirements in that state, the enforcement methods it deems appropriate, and any other locality-specific considerations.

A municipal ordinance created to comply with Phase II regulations must include a* prohibition *of illicit discharges and an* enforcement *mechanism.

A workgroup chaired by Massachusetts Department of Environmental Protection (MADEP) staff has been working on developing model bylaws that municipalities in the state can use to help them comply with Phase II regulations. The products of this group's work (model bylaws and associated guidance) are expected to be available on the MADEP Web site (see Chapter 10) by the time this manual is published. This group found that many of the available model ordinances did not fit well with the structure of Massachusetts government and, therefore, developed models that would work for towns in the state. The group also found that entry onto private property can be a tricky legal issue and should be treated carefully in any new or amended bylaws.

The Boston Water and Sewer Commission's (BWSC's) *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains* are available on the Web (*http://*www.bwsc.org; click on "Engineering" then "Regulations") and may serve as a useful local model. The regulations specify certain conditions under which BWSC

representatives must be granted access to property; denial of access may lead to termination of water service.

Note that illicit discharges to *storm* sewers should be addressed hand-in-hand with the issue of illegal connections of extraneous water to *sanitary* sewers (typically referred to as infiltration/inflow or I/I programs); bylaws or regulations should make clear which discharges belong in which system.

REFERENCES: CHAPTER 3

BWSC. 2002. *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains.* *http://www.bwsc.org*

Personal communication from Ginny Scarlet, MADEP, November 29, 2002.

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851.

USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* *http://www.epa.gov/owow/nps/ordinance/discharges.htm*

4 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: LOCATING PRIORITY AREAS

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: locating priority areas; tracing the source of an illicit discharge; removing the source of an illicit discharge; and program evaluation and assessment. The first component, locating priority areas, is the subject of this chapter. Each of the other three components will be discussed in chapters five, six, and seven respectively.

THE IDDE PLAN

- ➤ **Locating priority areas**
- **Tracing the source of an illicit discharge**
- **Removing the source of an illicit discharge**
- **Program evaluation and assessment**

The process of identifying "priority areas" can be broken down into three steps:

- ➤ ***Use available information to identify potential hot spots***
- ➤ ***Conduct dry-weather field screening to look for non-storm water discharges***
- ➤ ***Conduct water quality tests to see if these non-storm water discharges seem to be illicit discharges***

The following sections focus on each of these approaches.

IDENTIFYING POSSIBLE HOT SPOTS

"Hot spots" are areas that are considered to be likely sources of illicit discharges, based on available information. The following list provides examples of potential hot spots.

Commercial/ industrial areas These areas have been found in some communities' IDDE programs to (a) have significant numbers of illicit connections and/or (b) have discharges with a high potential to affect water quality (Tuomari, 1999 and Pitt et al., 1993). Specific business sectors can be prioritized (e.g., businesses subject to waste water pretreatment rules, businesses falling under certain Standard Industrial Classification [SIC] codes, or business sectors with a record of enforcement actions).

Older areas of town Older development may predate more stringent construction codes regarding illegal connections and may have deteriorating sewer and/or storm sewer infrastructure that can lead to infiltration problems.

Hot spots
Areas that are considered to be likely sources of illicit discharges, based on available information.

Areas where there have been repeated complaints Areas where illegal dumping or apparently contaminated discharges have been reported are obvious priority targets. Geographic Information System (GIS) mapping can be useful for visualizing complaint locations. These maps can be overlain with other pertinent resource information (e.g., locations of facilities that have had compliance violations, water quality data for receiving waters).

Locations identified from ambient water quality sampling data The locations of high levels of particular contaminants (e.g., bacteria) can help to target priority outfalls. Good resources for this information are the periodic water quality assessment reports ("305(b) reports") and lists of impaired waters ("303(d) lists") that the Clean Water Act requires each state to prepare and submit to EPA. These reports are prepared by each state's environmental agency and are available to the public, often on the state's Web site. Also, local watershed groups monitor many water bodies, particularly those in more developed areas. In addition to providing sampling data, these groups can often serve as valuable resources for information about a particular water body and potential problem areas. Other possible sources of water quality data include local Boards of Health (in Massachusetts, they must test at beaches) and water districts or departments.

CONDUCTING DRY-WEATHER OUTFALL/MANHOLE SURVEYS

Once your general geographic priority areas have been determined, dry-weather surveys of outfalls and/or manholes can be undertaken to look for non-storm water flows.

EPA recommends that you make visual observations of outfalls during dry weather. Some operators have found that dry-weather manhole inspections can also be useful. The presence of flow in a storm sewer outfall or manhole during dry weather indicates a likely illicit discharge. (Other explanations for the presence of such flow include infiltrating ground water or the diversion of a surface stream into the storm sewer system.) Because illicit discharges are often intermittent, you should ideally check for discharges multiple times in a given location (particularly in a priority location). Please note that only those with confined-space training should enter a manhole or outfall. The observation and sampling strategies described below can typically be conducted without entering manholes or outfalls.

IMPORTANT NOTE:
Only those with confined-space training should enter a manhole or outfall.

In implementing your dry-weather survey, consider adopting the following strategies.

- Combine this survey with the outfall mapping field survey (see Chapter 2) and/or water quality sampling of the discharges (discussed in the next section of this chapter).
- Enlist a watershed association or other volunteer organization to help with the outfall survey.
- Notify the public that the survey will be taking place (e.g., send notices to property owners in the area). Note that while it is desirable to keep the public informed

about the presence of survey-takers to prevent undue alarm, notification may also tip off an illegal discharger to curtail discharges; use your judgment as to the most appropriate course of action. For example, you might just specify a very general time frame during which the survey will take place.

- Keep safety considerations at the forefront of survey procedures at all times. Likely hazards should be anticipated and discussed with the individuals carrying out the survey, and individuals should be instructed to use their judgment and err on the side of caution as they conduct the survey. The survey should be conducted in groups of two or more. If manholes are opened for inspection as part of the survey, staff should wear high-visibility safety vests and block off their work area with traffic cones; police presence can be helpful for safety and to allay public concerns that can be created by individuals opening manholes.

- Determine your criterion for "dry weather." The working definition of dry weather used for sampling programs can vary depending on location-specific factors. Pitt et al. (1993) suggest that storm-runoff drainage ends in most urban areas no more than 12 hours after a storm event, but many programs (e.g., Boston, NH DES, San Diego) use a longer time period, such as no rain or no more than 1/10 inch of rain in the last 48 or 72 hours.

- Observe dry-weather flows for odor, color, turbidity, and floatable matter. Observe outfalls for deposits and stains, vegetation, and damage to outfall structures. This information can help identify contaminants present in the discharge and/or the likely nature of the discharge (e.g., sanitary, industrial). Some of the resources listed in Chapter 10 provide examples of data and observation sheets to be filled out for each outfall.

- Look up some of the resources listed in the references for this chapter for more detailed instructions for conducting dry-weather field surveys (e.g., MA DFWELE, 2002).

CASE STUDY: BOSTON WATER AND SEWER COMMISSION

USING SANDBAGS TO DETECT ILLICIT DISCHARGES

The Boston Water and Sewer Commission has had success using sandbags to help detect illicit discharges. Sandbags are placed in storm drain outlets that empty into manholes and/or water bodies. The sandbags are small enough that they do not block the storm drain outlet. They must be placed in the outlet after 48 hours of dry weather (1/10 inch of rain or less). After the bag is placed in the outlet, another 48 hours of dry weather is needed (total of 96 hours of dry weather). The outlet is then observed, and any water buildup behind the sandbag is sampled. This method is very effective in narrowing down the manhole junctures that contain illicit discharges. Sandbags cost approximately $60 each and can be reused. The main difficulty in using this method is the need for 96-hour periods of dry weather.

Information from an interview with Paul Barden, Deputy Director of Engineering Services, and Charlie Jewell, Project Director, Boston Water and Sewer Commission, August 15, 2002.

CONDUCTING WATER QUALITY TESTS

When dry-weather flow is observed, visual or odor observations (e.g., observation of pieces of toilet paper, strongly colored or very muddy discharge, or the odor of sewage or chemicals) may provide enough information to determine that the discharge is illicit and to identify the likely source. If not, water quality sampling can be used to determine whether the flow is likely to have resulted from an illicit discharge.

Certain water quality parameters can serve as indicators of the likely presence or absence of a specific type of discharge. Some of these parameters can be measured in the field with probes or test kits; others must be analyzed for in the laboratory. A wide variety of water quality parameters can be measured in an IDDE program, and many references exist that describe these parameters. Some of the more commonly used and useful parameters are summarized in Table 1, which focuses on parameters suggested in Pitt et al. (1993) and the subset of those recommended in EPA's Phase II regulations.

CASE STUDY: WINOOSKI, VERMONT

USE OF OPTICAL BRIGHTENERS

The city of Winooski, Vermont has found that testing for optical brighteners is an efficient, cheap way to determine the presence of a non-storm water discharge in a particular outfall. Optical brighteners are used in laundry detergents and thus serve as a marker for household or commercial laundry discharges. These tests are extremely sensitive to the presence of detergents.

To perform an optical-brightener test, an untreated cotton pad ($9/100 pads) surrounded by a mesh bag or a suet cage is placed in a storm drain outlet, manhole, or catch basin that has been found to have dry-weather discharge and left for a certain period of time (i.e., 5-7 days). The cotton pad is then brought back to the lab and placed under a UV lamp (approximately $200) in a dark room. A blue color indicates the presence of detergents, signifying either illegal dumping, a direct illicit connection, a leaking sewer, or leakage from a failed septic system. If the test is positive for detergents, further tests need to be performed to determine the source.

Information from an interview with Tim Grover, Water Pollution Control Facility Superintendent, City of Winooski, August 9, 2002.

TABLE 1 WATER QUALITY TEST PARAMETERS AND USES

Water Quality Test	Use of Water Quality Test	Comments
Conductivity	Used as an indicator of dissolved solids	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Typically measured in the field with a probe
Ammonia	High levels can be an indicator of the presence of sanitary wastewater	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Used very often and equipment is readily available; Boston, MA uses a field test kit (see case example)
Surfactants	Indicate the presence of detergent (e.g., laundry, car washing)	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Boston, MA uses a field test kit (see case example)
pH	Extreme pH values (low or high) may indicate commercial or industrial flows; not useful in determining the presence of sanitary wastewater (which, like uncontaminated baseflows, tends to have a neutral pH, i.e., close to 7)	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Typically measured in the field or lab with a probe
Temperature	Sanitary wastewater and industrial cooling water can substantially influence outfall discharge temperatures. This measurement is most useful during cold weather.	- Pitt et al. 1993 suggested parameter - Measured in the field with a thermometer or probe
Hardness	Used to distinguish between natural and treated waters	- Pitt et al. 1993 suggested parameter
Total Chlorine	Used to indicate inflow from potable water sources; not a good indicator of sanitary wastewater because chlorine will not exist in a "free" state in water for long (it will combine with organic compounds)	- Pitt et al. 1993 suggested parameter
Fluoride	Used to indicate potable water sources in areas where water supplies are fluoridated	- Pitt et al. 1993 suggested parameter
Potassium	High levels may indicate the presence of sanitary wastewater	- Pitt et al. 1993 suggested parameter
Optical Brighteners (Fluorescence)	Used to indicate presence of laundry detergents (which often contain fabric whiteners, which cause substantial fluorescence)	-Pitt et al. 1993 suggested parameter -Used by City of Winooski, VT (see case example)
Bacteria (fecal coliform, *E. coli,* and/or *enterococci)*	Used to indicate the presence of sanitary wastewater	- Used by NHDES (see case example in chapter 5)

REFERENCES: CHAPTER 4

Clark County (WA) Public Works. 2000. *Illicit Discharge Screening Project: Annual Summary 2000.* *http://www.co.clark.wa.us/site/clean/download/2000rept.pdf*

Colorado Department of Public Health and Environment, Water Quality Control Division. October 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal storm water discharge permit.* *http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html*

Donlon, A. 2001. *2000 Coastal Illicit Connection Remediation Grant Program: Final Report.* New Hampshire Department of Environmental Services and New Hampshire Estuaries Project. R-WD-01-10. *http://www.des.state.nh.us/wmb/was/nhep2000.pdf*

Interview with Paul Barden and Charlie Jewell, BWSC, August 15, 2002.

Interview with Andrea Donlon, NHDES, July 29, 2002.

Interview with Tim Grover, City of Winooski, VT, August 9, 2002.

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* *http://www.wef.org*

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. *Storm Drain Mapping Project Field Manual* (Draft). January 2002. *www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238.

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

Sargent, D. and W. Castonguay. 1998. *An Optical Brightener Handbook.* *http://www.mvpc.org/services_sec/mass_bays/optical_handbook.htm*

Tuomari, D. 1999. *Dos and Don'ts on Implementing a Successful Illicit Connection Program.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851.

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Identifying Illicit Connections.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_2.cfm*

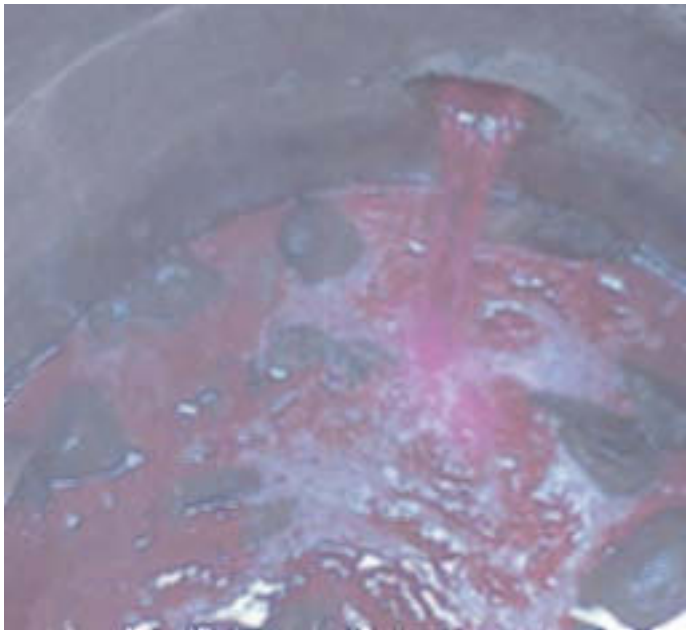
5 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: TRACING THE SOURCE OF AN ILLICIT DISCHARGE

***D**eveloping and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: (1) locating priority areas; (2) tracing the source of an illicit discharge; (3) removing the source of an illicit discharge; and (4) program evaluation and assessment. The second component, tracing the source of an illicit discharge, is the subject of this chapter.*

THE IDDE PLAN

- Locating priority areas
- ➤ Tracing the source of an illicit discharge
- Removing the source of an illicit discharge
- Program evaluation and assessment

Once storm drain outlets with evidence of illicit discharges have been located, various methods can be used to pinpoint the exact source of the discharge. These techniques, many of which are already used by municipal sewer departments, include manhole observation, video inspection, smoke testing, dye testing, aerial infrared and thermal photography, and tracking illegal dumping.



MANHOLE OBSERVATIONS

A key tracing technique is to follow dry-weather flows upstream along the conveyance system to bracket the location of the source. This can be accomplished by taking the following steps:

- ➤ Consult the drainage system map.
- ➤ Check the next "upstream" manhole with a junction to see if there is evidence of discharge. You may wish to sample each manhole that has a discharge.
- ➤ Repeat these steps until a junction is found with no evidence of discharge; the discharge source is likely to be located between the junction with no evidence of discharge and the next downstream junction.
- ➤ Be aware of the surrounding areas and look for water in gutters and streets.

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

Note that the Boston Water and Sewer Commission has had success working in the opposite direction (i.e., upstream to downstream) (Jewell 2001). Manhole observations can be time-consuming, but they are generally a necessary step before conducting other tests.

VIDEO INSPECTION

Mobile video cameras can be guided remotely through storm sewer lines to observe possible illegal connections into storm sewer systems and record observations on a videocassette or DVD. Public works staff can observe the videos and note any visible illegal connections. This technique is time-consuming and expensive but thorough and usually definitive, and it does not require the intrusion on members of the public that some of the other methods do.

SMOKE TESTING

This technique involves injecting non-toxic smoke into storm sewer lines and then noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the storm sewer lines. The injection is accomplished by placing a smoke bomb in the storm sewer manhole below ground and forcing air in after it. Smoke-generating machines can also be used. Test personnel should be stationed at points of suspected illegal connections or cracks/leaks, noting any escape of smoke (indicating an illicit connection or damaged storm sewer infrastructure). Prior to performing this test, it is necessary to inform building owners and occupants in the area in advance. It is also advisable to inform the police and fire departments.

Smoke testing involves injecting non-toxic smoke into storm sewer lines and then noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the storm sewer lines.

For a more thorough smoke-test program, the sanitary sewer lines can also be smoked. For houses that do not emit smoke during either the sanitary sewer or the storm sewer system tests, sewer gas may be venting inside, which is hazardous. Interviews with various IDDE program staff suggest that the smoke-test method is more effective in infiltration/inflow investigations of the sanitary sewer system than in detecting illegal connections to the storm sewer system.

Smoke may cause minor irritation of respiratory passages; residents with respiratory conditions should receive special attention to determine if it is safe for them to be present for the testing. Smoke testing is typically used to survey an area all at once, in contrast to dye testing, which tests one building at a time.

DYE TESTING

This technique involves flushing non-toxic dye into toilets and sinks and observing storm sewer and sanitary sewer manholes and storm sewer outfalls for the presence of the dye. Prior to performing this test, it is necessary to inform building owners and occupants in advance and gain permission for entry. Local public health and state water quality staff should also be notified so that they will be prepared to respond to citizens calling about any dye observed in surface waters.

To perform the test, you need a crew of two or more people (ideally, all with two-way radios). One person is inside the building; the others are stationed at the appropriate storm sewer and sanitary sewer manholes (which

CASE STUDY: NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

LOCATING AND TRACING ILLICIT DISCHARGES IN NEW HAMPSHIRE COASTAL COMMUNITIES

In 1996, the New Hampshire Department of Environmental Services (NHDES) began a program of investigating and eliminating illicit connections to storm drainage systems in coastal communities to reduce bacterial contamination in coastal waters. The following excerpt from the NHDES report on the first phase of the project describes the process used to detect and trace illicit discharges.

Beginning in the summer of 1996, the coastal shorelines were surveyed by foot or canoe at low tide for potential pollution sources. All pipes, seeps, streams, and swales with flow were sampled for bacteria. In addition, temperature was measured, and observations related to the condition of the pipe (stained or structurally damaged), odor, evidence of untreated wastewater (e.g., toilet paper), turbidity, color, debris, estimated flow, and any other observations were noted. Dry pipes were rechecked on several occasions for intermittent flow. Evidence indicating the presence of wastewater and/or elevated bacteria levels prompted further investigation of these locations.

Upstream catch basins and manholes associated with the outfall pipes that were identified by the screening process were surveyed for evidence of wastewater and sampled for bacteria. Smoke testing (using non-toxic smoke blown into catch basins) was then used to identify buildings connected to the storm drainage system by canvassing the neighborhood for vents emitting smoke. Final confirmation of an illicit connection from the buildings that emitted smoke was accomplished by dye testing indoor plumbing and observing the storm drainage and sewer systems for the presence or absence of the dye.

Feeder streams were surveyed for outfall pipes with dry-weather flow. Other potential bacteriological sources (e.g., pigeon roosting sites on bridges) were bracketed with water quality sampling stations. Where contaminated seeps and swales were suspected, the drainage area was surveyed for potential sources, such as broken sewer mains.

Landry, N. 1999. Elimination of Illicit Connections in Coastal New Hampshire Spurs Cooperation and Controversy: A Final Report to the New Hampshire Estuaries Project. New Hampshire Department of Environmental Services.

should be opened) and/or outfalls. The inside person drops dye into a plumbing fixture (i.e., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The inside person then radios to the outside crew that the dye has been dropped, and the outside crew watches for the dye in the storm sewer and sanitary sewer, recording the presence or absence of the dye.

The test is relatively quick (about 30 minutes per test), effective (results are usually definitive), and cheap. Dye testing is best used when the likely source of an illicit discharge has been narrowed down to a few specific houses or businesses.

AERIAL INFRARED AND THERMAL PHOTOGRAPHY

Aerial infrared and/or thermal photography can be used to locate illicit discharges from outfalls and failing septic systems using temperature and vegetation as markers. This technique requires knowledge of aerial photo interpretation. Using aerial infrared or thermal photographs, do the following:

- For outfalls
  - Note if discharge has a higher temperature than that of the stream
  - Note if algae growth is concentrated near an outfall
- For potentially failing septic systems
  - Note evidence of increased moisture in surrounding soil
  - Observe vegetation located close to the potentially failing septic system, and note any increase in vegetation compared to the surrounding area
  - Observe any increase in temperature readings at the septic system location

Aerial infrared and/or thermal photography can be used to locate illicit discharges from outfalls and failing septic systems using temperature and vegetation as markers.

This is still a developing technology and not commonly used for IDDE programs. You may still need further tests to determine specific houses/businesses with illegal connections. This technique has been used primarily for the detection of failing septic systems, which are only considered "illicit discharges" under the Phase II Storm Water program if they discharge into the storm sewer system.

TRACKING ILLEGAL DUMPING

Developing a coordinated system for collecting and tracking reports of illegal dumping can help pinpoint this difficult-to-find source of illicit discharges. Suggestions for tracking illegal dumping include the following:

- Create a hotline that can be used to report any illegal-dumping behavior (i.e., who illegally dumped and where illegal dumping occurred).
- Observe the materials that have been illegally dumped and trace the potential sources of the materials.
- Note where dumping occurs most often, record patterns of time of day and day of the week, and note common responsible parties.

Developing a coordinated system for collecting and tracking reports of illegal dumping can help pinpoint this difficult-to-find source of illicit discharges.

Challenges in addressing illegal dumping include the difficulty of catching dumpers in the act and the significant staff time needed to receive, respond to, and track complaints.

REFERENCES: CHAPTER 5

Center for Watershed Protection. *Pollution Prevention Fact Sheet: Illegal Dumping Control.* *http://www.stormwatercenter.net/Pollution_Prevention_Factsheets/IllegalDumpingControl.htm*

City of Cambridge, MA. 2002. *Cambridge Sewer and Stormwater Line Inspection and Testing Program.* *http://www.ci.cambridge.ma.us/~TheWorks/dye.html*

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* *http://www.wef.org*

Johnson, B. and D. Tuomari. 1998. *Did you know…The Impact of On-site Sewage Systems and Illicit Discharges on the Rouge River.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

Pierce County (WA) Public Works and Utilities. 2002. *BMP S.1: Eliminate Illicit Storm Drain Connections.* *http://www.co.pierce.wa.us/pc/services/home/environ/water/swm/sppman/bmps1.htm*

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

Town of Cary, NC. 2002. *Town of Cary Smoke Test.* *http://www.townofcary.org/smoke*

Tuomari, D. 1999. *Dos and Don'ts on Implementing a Successful Illicit Connection Program.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Failing Septic Systems.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_1.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Identifying Illicit Connections.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_2.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Illegal Dumping.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_3.cfm*

USEPA Region 5. 1998. *Illegal Dumping Prevention Guidebook.* EPA905-B-97-001. Waste, Pesticides, and Toxics Division, Chicago, Illinois. *http://www.epa.gov/reg5rcra/wptdiv/illegal_dumping/*

This page is intentionally blank.

6 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: REMOVING THE SOURCE OF AN ILLICIT DISCHARGE

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: (1) locating priority areas; (2) tracing the source of an illicit discharge; (3) removing the source of an illicit discharge; and (4) program evaluation and assessment. The third component, removing the source of an illicit discharge, is the subject of this chapter.

THE IDDE PLAN

- Locating priority areas
- Tracing the source of an illicit discharge
- ➢ Removing the source of an illicit discharge
- Program evaluation and assessment

Because there are various sources of illicit discharges to the storm sewer system, there are different kinds of actions municipalities may have to take to remove those sources and prevent future illicit discharges. This section groups those actions into three categories: compliance assistance and enforcement for illegal connections to homes and businesses; proper construction and maintenance of MS4s; and responding to and preventing illegal dumping.

COMPLIANCE ASSISTANCE AND ENFORCEMENT FOR ILLEGAL CONNECTIONS TO HOMES AND BUSINESSES

There is a range of ways in which municipalities may wish to handle the removal of illegal connections between homes or businesses and the storm sewer system. Enforcement measures should be spelled out in the required IDDE ordinance (see Chapter 3), but the MS4 operator will normally be allowed to use judgment about what mix of compliance assistance and enforcement actions is appropriate in a given situation. Typically, a municipality responds to the discovery of an illegal connection in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Voluntary Compliance

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 vol-

untary compliance. The cost of removing the connection and reconnecting it to the sanitary sewer system can be an obstacle. Recognizing this, some localities (e.g., Boston and coastal New Hampshire) have chosen to provide assistance with these costs, using municipal public works funds or state or federal grants.

Typically, a municipality responds to the discovery of an illegal connection in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Enforcement

EPA's model illicit discharge ordinance (Appendix A) provides an example of the enforcement steps that might be specified in a typical local ordinance. These steps are summarized below.

- The authorized enforcement agency sends the property owner a Notice of Violation (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 enforcement agency may "take any and all measures necessary to abate the violation and/or restore the property." The agency then may require reimbursement from the violator for the cost of the abatement, including administrative costs.
- The authorized enforcement agency also has the ability to 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."

If the municipality has not yet obtained enforcement authority (e.g., because a local ordinance has not yet been passed), it may be possible for the municipality to seek enforcement action from state or federal authorities. Involvement of state or federal

CASE STUDY: WAYNE COUNTY, MICHIGAN

ENFORCEMENT PROCEDURE

Wayne County, Michigan, began its illicit discharge detection and elimination program by targeting certain industrial and commercial facilities for site inspections—starting at the other end of the pipe from the outfall survey approach. County personnel visited the facilities, dye tested a representative number of plumbing fixtures, and observed general "housekeeping" practices.

If no violations were found, a thank you letter was sent to the facility acknowledging staff participation and closing the file. If a facility was found to have an illicit connection, a violation letter was sent, giving the facility 30 to 90 days to correct it. If a facility failed to comply with the request, the municipal plumbing inspector or building department became involved. If the municipality was not able to gain compliance, the facility was referred to the Michigan Department of Environmental Quality. When an illicit connection was eliminated, the county provided confirmation. Once a correction was confirmed, a confirmation/thank you letter was sent to facility management, thanking them for their participation and closing the file.

Information from Tuomari, D. 1999. Dos and Don'ts on Implementing a Successful Illicit Connection Program. *Technical Report of the Rouge River Demonstration Project.* ***http://www.rougeriver.com/proddata***

CASE STUDY: ST. LOUIS, MISSOURI

ENFORCEMENT PROCEDURE

The Metropolitan St. Louis Sewer District has a comprehensive ordinance regulating users who discharge into the sanitary sewer and storm sewer systems. Upon discovery of a violation of this ordinance, the Sewer District notifies the user of the nature of the violation and directs that actions be taken to remedy the noncompliance. Within 30 days of receipt of the notice, the user must submit a plan for correction of the violation to the Sewer District. 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. A written notice is sent within five days of the verbal notification.

The Sewer District 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).

If the violator does not take action within the time allotted, the Sewer District has the right to eliminate the illicit discharge at the expense of the violator. Legal actions can be taken against, and penalties imposed on, any violator that does not comply.

Information from Metropolitan St. Louis Sewer District Ordinance No. 8472, on EPA's nonpoint source pollution Web site at ***http://www.epa.gov/owow/nps/ordinance/discharges.htm***

authorities may also be necessary if the source of an illicit discharge is located outside of the municipality's boundaries. Examples of enforcement procedures implemented in Wayne County, Michigan, and St. Louis, Missouri, are included in this section.

PROPER CONSTRUCTION AND MAINTENANCE OF MS4s

Some illicit discharge problems may be the responsibility of the MS4 operator. These problems include cross-connections between the sanitary sewer and storm sewer systems and infiltration into damaged or deteriorating storm sewer pipes.

Cross-connections between a municipality's sanitary sewer and storm sewer systems may exist by mistake, because of deterioration over time, or as part of the design in an antiquated system. Complete and accurate maps of the sewer and storm sewer systems can help identify these cross-connections and prevent them during any new construction that takes place.

Contamination can infiltrate into a cracked or leaking MS4 from leaking sanitary sewer pipes, failing septic systems, or contaminated groundwater. To help prevent this, both MS4s and sanitary sewer systems should be inspected periodically and maintained properly to keep them in good repair.

PREVENTING AND RESPONDING TO ILLEGAL DUMPING

It is often difficult to identify and locate the individuals responsible for illegal dumping; therefore, a program to address illegal dumping should focus on prevention, backed up by enforcement to the extent possible.

EPA Region 5 has prepared an *Illegal Dumping Prevention Guidebook* that suggests the following key strategies that can be used to prevent illegal dumping.

- **Site maintenance and controls** Measures should be taken to clean up areas where illegal dumping has taken place, and controls such as signs or access restrictions should be used, as appropriate, to prevent further dumping.
- **Community outreach and involvement** Outreach is the linchpin of an illegal-dumping prevention program and can include the following components:
  - Educating businesses, municipal employees, and the general public about the environmental and legal consequences of illegally disposing of waste into the storm sewer system
  - Providing and publicizing ways for citizens to properly dispose of waste
  - Providing opportunities for citizens to get involved in preventing and reporting illegal dumping
- **Targeted enforcement** This strategy should include a prohibition against illegal dumping via ordinance or another similar measure, backed up by trained law-enforcement personnel and possibly field operations.
- **Program measurement** Tracking and evaluation methods should be used to measure the impact of illegal-dumping prevention efforts and determine whether goals are being met.

Although the EPA Region 5 guidebook is targeted more to land dumping of solid waste, these strategies can also be applied to illegal dumping into the storm drain system. Some specific methods that municipalities can use to implement these strategies include the following:

- **Site maintenance and controls**
  - Storm-drain stenciling program
  - Spill-response plans for hazardous-waste spills
- **Community outreach and involvement**
  - An illegal-dumping reporting hotline
  - Outreach to business sectors that handle hazardous materials and/or have a history of illegal-dumping problems; outreach should include information on Best Management Practices for spill prevention and proper waste disposal

- Printed outreach materials for the public
- Publicizing of waste-disposal options, such as used oil recycling and household hazardous waste collections

➤ **Targeted enforcement**

- An illegal-dumping ordinance (or section of IDDE ordinance)
- Surveillance of known illegal-dumping locations
- Business facility inspections
- Training of municipal employees, police officers, and other local entities to be on lookout

➤ **Program measurement**

- Tracking of incident locations
- Compilation of statistics (e.g., annual cleanup costs, facility compliance, arrests, convictions, fines, complaints)

REFERENCES: CHAPTER 6

California Coastal Commission. 2002. *Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities.* *http://www.coastal.ca.gov/la/murp.html*

Center for Watershed Protection. *Pollution Prevention Fact Sheet: Illegal Dumping Control.* *http://www.stormwatercenter.net/Pollution_Prevention_Factsheets/IllegalDumpingControl.htm*

Interview with Paul Barden and Charlie Jewell, BWSC, August 15, 2002.

Interview with Andrea Donlon, NHDES, July 29, 2002.

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

USEPA. 1997. *Guidance Manual for Implementing Municipal Storm Water Management Programs – Volume 1: Planning and Administration* (Draft). Office of Wastewater Management and Office of Research and Development. *http://www.epa.gov/npdes/pubs/owm0233.pdf*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Illegal Dumping.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_3.cfm*

USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* *http://www.epa.gov/owow/nps/ordinance/discharges.htm*

This page is intentionally blank.

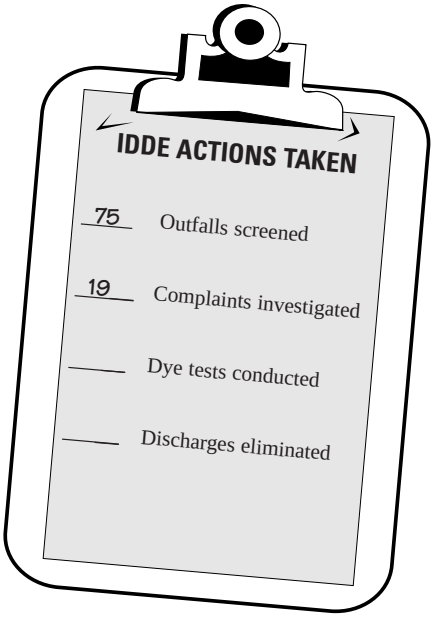
7 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: EVALUATION OF THE IDDE PROGRAM

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: (1) locating priority areas; (2) tracing the source of an illicit discharge; (3) removing the source of an illicit discharge; and (4) program evaluation and assessment. The fourth component, program evaluation and assessment, is the subject of this chapter.

THE IDDE PLAN

- Locating priority areas
- Tracing the source of an illicit discharge
- Removing the source of an illicit discharge
- ➤ Program evaluation and assessment

EPA recommends that the IDDE plan include procedures for program evaluation and assessment. Program evaluation is the time to step back, look at what has been done, determine what worked and what didn't, and make adjustments to planned future actions as appropriate. In this final component of your IDDE plan, you outline how you will go about evaluating your program.



EVALUATION STRATEGY

Evaluation procedures should include documentation of actions taken to locate and eliminate illicit discharges. Such documentation might include numbers of outfalls screened, complaints taken and investigated, feet of storm sewers videotaped, numbers of discharges eliminated, or number of dye or smoke tests conducted. Note that this component of the IDDE plan fits in with the overall Phase II requirements for identifying measurable goals for each Best Management Practice (BMP) and reporting on progress toward achieving those goals. (Chapter 9 discusses BMPs and measurable goals in more detail.) Annual reports are necessary during the first permit term (typically five years), and in years two and four in subsequent terms. (For more information on reporting requirements, see EPA's Fact Sheet 2.9.)

Evaluation procedures should include documentation of actions taken to locate and eliminate illicit discharges.

Determining the impact of these actions is more of a challenge, but it is an important part of the overall process because EPA allows for adjustments to the storm water management program over the life of the permit. Assessment of what worked and what didn't provides the information needed to make these adjustments to your IDDE program. EPA's Phase II regulations do not specify exactly how to evaluate your IDDE program, so check whether your permitting authority has made any particular specifications, and brainstorm from there.

Here are few suggestions for assessing the effectiveness of various IDDE strategies:

- Evaluate the number of possible illicit discharges that were detected using different detection methods. This can help you determine which detection methods are most effective.
- Evaluate the number of discharges and/or quantity of discharges eliminated using different possible enforcement and compliance measures.
- If you have access to monitoring data for receiving waters, evaluate changes in the water quality of receiving waters.
- Program evaluation might also include procedures for considering efficiency and feasibility. Questions you might want to ask include:
  - How much staff time and expense did it take to achieve a given result?
  - Were practical difficulties encountered with this approach? What were they, and how much of a problem did they present?

The strategies listed above are only suggestions. Because you are allowed a great deal of flexibility in determining what procedures you will use for program evaluation and assessment, you can decide what procedures will be most helpful in providing the information that you will need to move forward with your IDDE program.

REFERENCES: CHAPTER 7

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.9: *Permitting and Reporting: The Process and Requirements.* EPA 833-F-011. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA New England. 2002. *NPDES General Permit for Storm Water Discharges from Regulated Small Municipal Separate Storm Sewer Systems (MS4s*) (Draft). September 27, 2002. *http://www.epa.gov/region01/npdes/ms4.html*

8 OUTREACH TO EMPLOYEES, BUSINESSES, AND THE GENERAL PUBLIC

The fourth mandatory element of an IDDE program calls for the MS4 operator to "inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste." As noted in the Introduction, the requirement for public education and outreach on storm water impacts is also one of the six minimum control measures in the storm water management program. Therefore, fulfilling the outreach requirement for IDDE helps the MS4 to comply with this mandatory element; IDDE outreach can be integrated into the broader storm water outreach program.

Some suggestions for conducting IDDE outreach to the different community sectors are presented below. Many examples of storm water outreach materials, including some that are intended to be modified and used by anyone, are available on the Web; some useful Web sites are listed in Chapter 10. Operators of regulated small MS4s may want to work together with other operators in their area in developing outreach materials and campaigns to share ideas and save money.

PUBLIC EMPLOYEES

While it is clear that public works employees should receive specific technical training on the requirements of the IDDE program and the techniques that will be used to carry it out, other municipal departments should also be targeted for training.

A training program for municipal employees on pollution prevention techniques is required under the "Pollution Prevention/Good Housekeeping for Municipal Operations" minimum control measure. Preventing non-storm water discharges into the storm sewer system from municipal operations can be one part of this training.

Many public employees can play an important role as partners in the detection and/or prevention of illicit discharges.

Many public employees can play an important role as partners in the detection and/or prevention of illicit discharges. For example, highway department staff who maintain catch basins can look for signs of illicit discharges. Municipal building inspectors can help ensure that illegal connections to the storm sewer system do not take place in construction and renovation projects. Police officers, public works employees, and other municipal staff whose jobs keep them outside and mobile can help spot illegal dumpers. Fire and police department personnel who respond to hazardous material spills can help keep these spills out of the storm sewer system and adjacent water bodies.

BUSINESSES

Most businesses are willing to comply with environmental requirements and take proactive steps to prevent pollution if they understand the issues and the possible solutions. Here are some steps you can take to reach out to businesses.

Most businesses are willing to comply with environmental requirements and take proactive steps to prevent pollution if they understand the issues and the possible solutions.

- Create a general brochure and presentation to inform businesses about the IDDE program. This information can be presented and/or made available at Chamber of Commerce meetings and other business forums.
- Conduct compliance assistance outreach (e.g., visits, group training, and/or printed materials) for specific business types (e.g., auto repair shops, mobile carpet cleaning, restaurants).
- Provide contractors and developers with information on preventing illegal connections (in coordination with training on construction and post-construction storm water requirements).

GENERAL PUBLIC

There are many ways in which the general public can be made aware of environmental issues and the things they can do to help mitigate or prevent problems. Here are some things you can do to inform and involve the public.

- Work with citizen groups to conduct storm-drain stenciling (e.g., "Don't Dump – Drains to River") and outfall surveys.
  - In conducting these activities, you should:
    - Educate the groups about their activity (either informally or via a video or other presentation)
    - Make sure volunteers understand constraints associated with storm-drain stenciling activities (e.g., heavy traffic use areas, historic districts)
    - Have volunteers sign liability forms, if necessary
  - You may also wish to:
    - Publicize the activities through the media
    - Give volunteers brochures to hand out to the public with who they interact
    - Repeat stenciling periodically (due to paint wear off), unless placards are used—stenciling on curbs lasts longer than on street surfaces
    - See Chapter 10 for information on storm-drain stenciling resources

If made aware of environmental issues, the general public can help mitigate or prevent problems.

- Create a program to promote, publicize, and facilitate public reporting of illicit connections or discharges (e.g., a hotline). Some considerations in running a hotline include:
  - Callers should be able to at least leave a message at any time of day
  - It may be helpful to have the hotline staffed during business hours
  - A system should be created for monitoring the hotline so that staff can follow up quickly on reports of discharges

  - The municipality may wish to offer a small reward for callers that provide information leading to the detection of an illicit discharge source

- Distribute (by mail and by making available at various locations and events) printed outreach materials. A general flyer about illicit discharges might include information on the following:
  - Background information on water pollution
  - A definition of what constitutes an illicit discharge
  - Measures to prevent illicit discharges
  - Information about the municipality's illicit discharge ordinance
- Create Public Service Announcements for radio and/or television.
- Work with the local access cable station and local newspapers to develop features on illicit discharge prevention.
- Create and publicize a household hazardous waste disposal/recycling program.
- Provide classroom speakers and/or printed information for schools.

REFERENCES: CHAPTER 8

Chesterfield County (VA). Undated. *Household Guide to Chesterfield County's Illicit Discharge Ordinance.* *http://www.chesterfield.gov/CommunityDevelopment/Engineering/HouseholdFactSheet.pdf*

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide.* EPA 833-R-00-002. Office of Water. *http://www.epa.gov/npdes/pubs/comguide.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.3: *Public Education and Outreach Minimum Control Measure.* EPA 833-F-00-005. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.8: *Pollution Prevention/Good Housekeeping Minimum Control Measure*. EPA 833-F-00-010. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs – *Public Education and Outreach on Storm Water Impacts.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/pub_ed.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs – *Public Education and Outreach on Storm Water Impacts: Proper Disposal of Household Hazardous Wastes.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/edu_5.cfm*

This page is intentionally blank.

9 BMPS AND MEASURABLE GOALS FOR IDDE

As mentioned in the Introduction, operators of regulated small MS4s generally must submit applications for Phase II storm water general permits by March 10, 2003. As part of their application, they must identify best management practices (BMPs) that they will use to comply with each of the six minimum control measures, and the measurable goals that they will use to demonstrate BMP implementation. Within the first permit term, the operators have to fully implement their storm water management programs.

GETTING STARTED

EPA allows MS4 operators a great deal of flexibility in determining what BMPs are most appropriate for their storm water programs. The agency has developed the following materials to assist operators in identifying appropriate BMPs:

- A *National Menu of Best Management Practices for Storm Water Phase II*, which includes a toolkit of example BMPs for each of the Phase II minimum control measures (available on the Web)
- *Measurable Goals Guidance for Small MS4s*
- A *Storm Water Phase II Compliance Guide*, which offers examples of BMPs and measurable goals for each of the six minimum measures

EPA allows MS4 operators a great deal of flexibility in determining what BMPs are most appropriate for their storm water programs.

Others, including states, regional agencies, trade associations, and non-profit organizations have also developed BMP information.

A sample list of IDDE BMPs and measurable goals is presented below. This list draws from BMP and measurable goal recommendations that have been offered by EPA and others. The list has not been officially endorsed by EPA or state agencies; it is intended to serve as a starting point to help municipalities think about the BMPs and measurable goals that are appropriate to their IDDE programs. BMPs are listed in bold, followed by the measurable goals for each BMP. (The BMPs are organized according to the four elements required in an IDDE program.)

STORM SEWER MAP

- **Create a storm sewer map**
  - Map a certain percentage of outfalls (adding up to 100% by the end of the permit term) or of the area of the town

ORDINANCE

➤ Pass an illicit discharge ordinance

- Draft an IDDE ordinance (or storm water ordinance with IDDE component) or an amendment to existing bylaws
- Pass an ordinance or amendment

IDDE PLAN

➤ Prepare an IDDE plan

- Complete a final plan and obtain the signature of the person overseeing the plan

➤ Conduct dry weather field screening of outfalls

- Screen a certain percentage of outfalls (adding up to 100% by the end of the permit term)

➤ Trace the source of potential illicit discharges

- Trace the source of a certain percentage of continuous flows (adding up to 100% by the end of the permit term)
- Trace the source of a certain percentage of intermittent flows and illegal dumping reports (100% may never be an achievable goal in this case)

➤ Eliminate illicit discharges

- Eliminate a certain number of discharges and/or a certain volume of flow, or a certain percentage of discharges whose source is identified (adding up to 100% by the end of the permit term)

OUTREACH

➤ Implement and publicize a household hazardous waste collection program

- Hold a periodic (e.g., annual) hazardous waste collection day
- Mail flyers about the hazardous waste collection program to all town residences

➤ Create and distribute an informational flyer for homeowners about IDDE

- Mail the flyer to town residences
- Print the flyer as a doorknob hanger and have water-meter readers distribute it

➤ Create and distribute an informational flyer for businesses about IDDE

- Mail the flyer to targeted businesses

➤ Work with community groups to stencil storm drains

- Stencil a certain percentage of drains

➤ **Create and publicize an illicit discharge reporting hotline**

- Put the hotline in place
- Include an announcement of the hotline in sewer bills
- Follow up on all hotline reports within 48 hours

REFERENCES: CHAPTER 9

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide.* EPA 833-R-00-002. Office of Water. *http://www.epa.gov/npdes/pubs/comguide.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.9: *Permitting and Reporting: The Process and Requirements.* EPA 833-F-011. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA. 2002. *National Menu of Best Management Practices for Storm Water Phase II.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm*

USEPA. 2002. *Measurable Goals Guidance for Phase II Small MS4s.* *http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm*

This page is intentionally blank.

10 RESOURCES

WEB SITES AND PUBLICATIONS

Key Information Available on EPA's Storm Water Web Site

Entry Point and General Information
http://www.epa.gov/npdes
→ click on "Storm Water"
→ click on "Municipal Separate Storm Sewer Systems" or "Phase II"

Storm Water Phase II Final Rule
http://www.epa.gov/npdes/regulations/phase2.pdf
IDDE section of the Phase II Final Rule: see section II(H)(3)(b)(iii), pp. 68756-68758.

EPA's Fact Sheet Series
http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm

Overview
1.0 *Storm Water Phase II Final Rule: An Overview*

Small MS4 Program
2.0 *Small MS4 Storm Water Program Overview*
2.1 *Who's Covered? Designation and Waivers of Small Regulated MS4s*
2.2 *Urbanized Areas: Definition and Description*

Minimum Control Measures
2.3 *Public Education and Outreach*
2.4 *Public Participation/Involvement*
2.5 *Illicit Discharge Detection and Elimination*
2.6 *Construction Site Runoff Control*
2.7 *Post-Construction Runoff Control*
2.8 *Pollution Prevention/Good Housekeeping*
2.9 *Permitting and Reporting: The Process and Requirements*
2.10 *Federal and State-Operated MS4s: Program Implementation*

Construction Program
3.0 *Construction Program Overview*
3.1 *Construction Rainfall Erosivity Waiver*

Industrial "No Exposure"
4.0 *Conditional No Exposure Exclusion for Industrial Activity*

Documents
Storm Water Phase II Compliance Assistance Guide
http://www.epa.gov/npdes/pubs/comguide.pdf

National Menu of BMPs for Storm Water Phase II
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm

Measurable Goals Guidance for Phase II Small MS4s
http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm

Storm Water Web Sites

The Rouge River National Wet Weather Demonstration Project
http://www.rougeriver.com
(See specific information on IDDE at http://www.rougeriver.com/techtop/illicit/overview.html .)

Center for Watershed Protection's Storm Water Manager's Resource Center
http://www.stormwatercenter.net

The University of Tennessee's Municipal Technical Advisory Service NPDES Phase II Storm Water Management BMP Toolkit
http://www.mtas.utk.edu/bmptoolkit.htm
The Illicit Discharge section provides a number of useful web links and downloadable PDFs.

Organization Web Sites

Water Environment Federation
http://www.wef.org

American Public Works Association
http://www.apwa.net

Local Government Environmental Assistance Network
http://www.lgean.org

Center for Watershed Protection
http://www.cwp.org

The Boston Water and Sewer Commission
(the Web site includes the BWSC's regulations, outreach information, and other useful items)
http://www.bwsc.org

Storm Water Manuals

California Coastal Commission. 2002. *Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities.* *http://www.coastal.ca.gov/la/murp.html*

Colorado Department of Public Health and Environment, Water Quality Control Division. October 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal stormwater discharge permit.*
http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html

IDDE Manuals

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.*
http://www.projectcleanwater.org/html/model_programs.html

Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238. (Available on the Web via EPA's National Environmental Publications Information System, *http://www.epa.gov/clariton*.)

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.*
http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html

Information on Specific Topics

Ordinances

USEPA's Model Ordinances to Protect Local Resources: Illicit Discharges.
http://www.epa.gov/owow/nps/ordinance/discharges.htm
(The same information can be found at *http://www.stormwatercenter.net.*)

Boston Water and Sewer Commission's *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains. http://www.bwsc.org*

The Massachusetts Citizen Planner Training Collaborative offers "Tips on Drafting Bylaws" for Massachusetts municipalities: *http://www.umass.edu/masscptc/Tips_on_Drafting.html*

Optical Brighteners

Sargent, D. and W. Castonguay. 1998. *An Optical Brightener Handbook.* Available at:
http://www.mvpc.org/services_sec/mass_bays/optical_handbook.htm and
http://www.naturecompass.org/8tb/sampling/

Dye Testing

Dye supplier used by a reviewer of this manual: NORLAB, Inc., Amherst, OH. 1-800-247-9422;
http://www.norlabdyes.com

Smoke Testing

Smoke testing equipment supplier used by a reviewer of this manual: Hurco Technologies, Inc., 1-800-888-1436;
http://www.hurcotech.com

Outfall/Manhole Surveys

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. Storm Drain Mapping Project Field Manual (Draft). January 2002. *http://www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* (Available for purchase via the WEF Web site, *http://www.wef.org*.)

Outreach

- **Household Hazardous Waste Collection**
  Household hazardous waste collection days in New Hampshire can be viewed online at *http://www.des.state.nh.us/hhw/hhwevent.htm.*

  Environmental Depot, Burlington VT. *http://www.cswd.net/facilities/hazardous_waste.shtml*

- **Storm-Drain Stenciling**
  Earthwater Stencils, an organization that does storm drain stenciling: *http://www.earthwater-stencils.com/*

  The Ocean Conservancy's Storm Drain Sentries program has a goal of having volunteers stencil one million storm drains with educational pollution prevention messages. The Ocean Conservancy supplies volunteers with a fact sheet about nonpoint source pollution, tips on conducting a stenciling project, and stencils for volunteer organizations to use. In return, stenciling project leaders are asked to submit data about the number of storm drains they stenciled, the types of pollutants found near the storm drains, and potential pollutant sources. This information is added to a growing database maintained by the Ocean Conservancy. Contact the Ocean Conservancy's Office of Pollution Prevention and Monitoring at 757-496-0920 or *stormdrain@oceanconservancyva.org.*
  http://www.oceanconservancy.org/dynamic/getInvolved/events/sentries/sentries.htm

  Resources for storm drain stenciling programs in New Hampshire:

  - Coordinated by Julia Peterson of UNH-Cooperative Extension in the coastal watershed *http://ceinfo.unh.edu/Common/Documents/gsc5401.htm*. Also described at *http://www.seagrant.unh.edu/extension.htm*
  - Coordinated by the NH Coastal Program (part of the Office of State Planning) *http://www.state.nh.us/coastal/CoastalEducation/marinedebris.htm*
  - Description of Manchester's storm drain stenciling on EPA's Web site describing the SEPP *http://www.epa.gov/region1/eco/csoman/sepp.html* (See #1 and #6)

- **Outreach Materials**
  EPA is preparing educational materials on different water topics each month as part of the year-long celebration of the 30th anniversary of the Clean Water Act. April 2003 will be Storm Water Month. The public education kit is expected to include:

  - General Storm Water Awareness brochure
  - Homeowner Guide (car washing, vehicle fluids changing, lawn & garden care, pet waste, septic system management)
  - Small Construction Guide poster
  - Press release
  - Public service announcement for the radio
  - Stickers
  - Door hanger with illicit discharge message
  - PowerPoint presentation

  These items will be available for download or order on EPA's Year of Clean Water Web site, *http://www.epa.gov/water/yearofcleanwater/month.html*. Before the materials are available on the Web site, you can contact EPA's contractor, TetraTech, to be on the mailing list for the materials.
  Email Kathryn Phillips at *tetratech1@earthlink.net* or *kathryn.phillips@tetratech-ffx.com.*

CONTACTS

USEPA-New England is the NPDES permitting authority for Massachusetts and New Hampshire. The other five NEIWPCC member states serve as NPDES permitting authorities for the storm water program. Contact information below was taken from the EPA-New England Web site *http://www.epa.gov/region01/npdes/stormwater/administration.html*, the EPA NPDES Web site *http://www.epa.gov/npdes*, and the New York State Department of Environmental Conservation Web site *http://www.dec.state.ny.us*.

U.S. EPA

EPA Region 1, New England
Regional Storm Water Coordinator
Thelma Murphy 617-918-1615; *murphy.thelma@epa.gov*

Regional Storm Water Assistance Team
Ann Herrick 617-918-1560; *herrick.ann@epa.gov*
Shelly Puleo 617-918-1545; *puleo.shelly@epa.gov*
Olga Vergara 617-918-1519, *vergara.olga@epa.gov*

Massachusetts Assistance
Dave Gray 617-918-1577; *gray.davidj@epa.gov*

EPA Region 2
Regional Storm Water Coordinator
Karen O'Brien 212-637-3717; *obrien.karen@epa.gov*

STATES

Connecticut
Connecticut Department of Environmental Protection
Bureau of Water Management
Permitting, Enforcement, and Remediation Division
http://www.dep.state.ct.us

Contact: Chris Stone 860-424-3850; *chris.stone@po.state.ct.us*

Maine
Maine Department of Environmental Protection
Bureau of Land and Water Quality
http://www.state.me.us/dep/blwq/stormwtr/index.htm

Contact: David Ladd 207-287-5404; *david.ladd@state.me.us*

Massachusetts
Massachusetts Department of Environmental Protection
Division of Watershed Management
http://www.state.ma.us/dep/brp/stormwtr/stormhom.htm

Contacts: Ginny Scarlet 508-767-2797; *ginny.scarlet@state.ma.us*
Linda Domizio 508-849-4005; *linda.domizio@state.ma.us*

New Hampshire
New Hampshire Department of Environmental Services
Storm Water Fact Sheet: *http://www.des.state.nh.us/factsheets/wwt/web-8.htm*
Storm Water Web Site: *http://www.des.state.nh.us/StormWater*
Contacts: Jeff Andrews 603-271-2984
Public Information and Permitting Office 603-271-2975

New York
New York State Department of Environmental Conservation
Division of Water
http://www.dec.state.ny.us/website/dow/mainpage.htm
Contact: Mike Rafferty 518-402-8094; *mrraffer@gw.dec.state.ny.us*

Rhode Island
Rhode Island Department of Environmental Management
Water Resources – Permitting
http://www.state.ri.us/dem/programs/benviron/water/permits/ripdes/stwater/index.htm
Contacts: Margarita Chatterton 401-222-4700 x7605; *mchatter@dem.state.ri.us*
Greg Goblick 401-222-4700 x7265; *ggoblick@dem.state.ri.us*

Vermont
Vermont Department of Environmental Conservation
Water Quality Division
http://www.anr.state.vt.us/dec/waterq/stormwater.htm
Contact: Peter LaFlamme 802-241-3765; *petel@dec.anr.state.vt.us*

APPENDIX A

Model Illicit Discharge and Connection Stormwater Ordinance[1]

ORDINANCE NO. _____

SECTION 1. PURPOSE/INTENT.

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of (_____) through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

1)To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user

(2) To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system

(3) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance

SECTION 2. DEFINITIONS.

For the purposes of this ordinance, the following shall mean:

Authorized Enforcement Agency: employees or designees of the director of the municipal agency designated to enforce this ordinance.

Best Management Practices (BMPs): schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Activities subject to NPDES Construction Permits. Currently these include construction projects resulting in land disturbance of 5 acres or more. Beginning in March 2003, NPDES Storm Water Phase II permits will be required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials. 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.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section X of this ordinance.

Illicit Connections. An illicit connection is defined as either of the following:

[1] USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* http://www.epa.gov/owow/nps/ordinance/discharges.htm

Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or,
Any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.
Industrial Activity. Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).
National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit. means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.
Non-Storm Water Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.
Person. means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.
Pollutant. Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
Premises. Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.
Storm Drainage System. Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.
Storm Water. Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.
Stormwater Pollution Prevention Plan. A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.
Wastewater means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

SECTION 3. APPLICABILITY.
This ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

SECTION 4. RESPONSIBILITY FOR ADMINISTRATION.
The_____ [authorized enforcement agency] shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Director of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the agency.

SECTION 5. SEVERABILITY.
The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance 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 Ordinance.

SECTION 6. ULTIMATE RESPONSIBILITY.

The standards set forth herein and promulgated pursuant to this ordinance are minimum standards; therefore this ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

SECTION 7. DISCHARGE PROHIBITIONS.

Prohibition of Illegal Discharges.

No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

(1) The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), fire fighting activities, and any other water source not containing Pollutants.

(2) Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety.

(3) Dye testing is an allowable discharge, but requires a verbal notification to the authorized enforcement agency prior to the time of the test.

(4) The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

Prohibition of Illicit Connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

SECTION 8. SUSPENSION OF MS4 ACCESS.

Suspension due to Illicit Discharges in Emergency Situations

The _____ [authorized enforcement agency] may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the United States, or to minimize danger to persons.

Suspension due to the Detection of Illicit Discharge

Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such

termination would abate or reduce an illicit discharge. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for a reconsideration and hearing.

A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the authorized enforcement agency.

SECTION 9. INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the _____ [authorized enforcement agency] prior to the allowing of discharges to the MS4.

SECTION 10. MONITORING OF DISCHARGES.

1. Applicability.
   This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

2. Access to Facilities.

(1) The_____ [authorized enforcement agency] shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

(3) Facility operators shall allow the _____[authorized enforcement agency] ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(3) The _____ [authorized enforcement agency] shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's storm water discharge.

(4) The _____ [authorized enforcement agency] has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the [authorized enforcement agency] and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(6) Unreasonable delays in allowing the _____ [authorized enforcement agency] access to a permitted facility is a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.

(7) If the _____ [authorized enforcement agency] has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction.

SECTION 11. REQUIREMENT TO PREVENT, CONTROL, AND REDUCE STORM WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.

[Authorized enforcement agency] will adopt requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the U.S. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPP) as necessary for compliance with requirements of the NPDES permit.

SECTION 12. WATERCOURSE PROTECTION.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

SECTION 13. NOTIFICATION OF SPILLS.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the U.S. said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the _____ [authorized enforcement agency] within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

SECTION 14. ENFORCEMENT.

1. Notice of Violation.
   Whenever the _____ [authorized enforcement agency] finds that a

person has violated a prohibition or failed to meet a requirement of this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
(a) The performance of monitoring, analyses, and reporting;
(b) The elimination of illicit connections or discharges;
(c) That violating discharges, practices, or operations shall cease and desist;
(d) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and
(e) Payment of a fine to cover administrative and remediation costs; and
(f) The implementation of source control or treatment BMPs.
If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

SECTION 15. APPEAL OF NOTICE OF VIOLATION.
Any person receiving a Notice of Violation may appeal the determination of the authorized enforcement agency. The notice of appeal must be received within _ days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or his/her designee shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the municipal authority or their designee shall be final.

SECTION 16. ENFORCEMENT MEASURES AFTER APPEAL.
If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or , in the event of an appeal, within __ days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

SECTION 17. COST OF ABATEMENT OF THE VIOLATION.
Within __ days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within __ days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.
Any person violating any of the provisions of this article shall become liable to the city by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of __ percent per annum shall be assessed on the balance beginning on the _st day following discovery of the violation.

SECTION 18. INJUNCTIVE RELIEF.
It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this ordinance, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

SECTION 19. COMPENSATORY ACTION.
In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the authorized enforcement agency may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

SECTION 20. VIOLATIONS DEEMED A PUBLIC NUISANCE.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this 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.

SECTION 21. CRIMINAL PROSECUTION.

Any person that has violated or continues to violate this ordinance shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty of _____ dollars per violation per day and/or imprisonment for a period of time not to exceed ____ days.

The authorized enforcement agency may recover all attorney's fees court costs and other expenses associated with enforcement of this ordinance, including sampling and monitoring expenses.

SECTION 22. REMEDIES NOT EXCLUSIVE.

The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

SECTION 23. ADOPTION OF ORDINANCE.

This ordinance shall be in full force and effect __ days after its final passage and adoption. All prior ordinances and parts of ordinances in conflict with this ordinance are hereby repealed.

PASSED AND ADOPTED this ____ day of _____, 19__, by the following vote:

APPENDIX H

IDDE Employee Training Record

Stoughton DPW - IDE Training 8/28/23

Attendees

John Bolio
Matt Bobbitt
Jon Cook
Mike Ferreira
Bob Dupont.

ENVIRONMENTAL PARTNERS

— An Apex Company —

1900 Crown Colony Drive, Suite 402

Quincy, MA 02169

P: 617.657.0200 F: 617.657.0201

envpartners.com