STORMWATER MANAGEMENT PLAN

Stoughton, MA

September 2022

ENVIRONMENTAL PARTNERS

— An Apex Company —

Stormwater Management Plan (SWMP) Revision History

MS4 Materials that supplement the 2019 SWMP Document

Revision #	Date	Comments
0	6/2019	SWMP Published for Town Comment
1	9/2020	IDDE Plan and SWPPPs are included as Appendix K
2	9/2021	Year 3 Updates
3	9/2022	Year 4 Updates

"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

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SECTION 1 BACKGROUND

SECTION 1.1 STORMWATER REGULATION

The Stormwater Phase II Final Rule was promulgated in 1999 and was the next step after the 1987 Phase I Rule in an effort by the Environmental Protection Agency (EPA) to preserve, protect, and improve the Nation's water resources from polluted stormwater runoff. The Phase II Rule expands the Phase I program by requiring additional programs and practices to control polluted stormwater runoff from small Municipal Separate Storm Sewer Systems (MS4s) in urbanized areas and construction sites, through the use of National Pollution Discharge Elimination System (NPDES) permits. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of stormwater discharges that have the greatest likelihood of causing continued environmental degradation. Under the Phase II rule, all MS4s with stormwater discharges from U.S. Census-designated Urbanized Area are required to seek NPDES permit coverage for those stormwater discharges.

SECTION 1.2 PERMIT PROGRAM BACKGROUND

On May 1, 2003, EPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 small MS4 Permit) consistent with the Phase II Rule. The 2003 small MS4 Permit covered "traditional" (e.g., cities and towns) and "non-traditional" (e.g., Federal and state agencies) MS4 operators located in the states of Massachusetts and New Hampshire. This permit expired on May 1, 2008, but remained in effect until operators were authorized under the 2016 small MS4 General Permit, which became effective on July 1, 2018.

SECTION 1.3 STORMWATER MANAGEMENT PLAN (SWMP)

The SWMP describes and details the activities and measures that will be implemented to meet the terms and conditions of the 2016 MS4 Permit. The SWMP accurately describes the permittees plans and activities. The document should be updated and/or modified during the permit term as the permittee's activities are modified, changed or updated to meet permit conditions. Additionally, MS4 reports (Operations and Maintenance Plan, Illicit Discharge Detection and Elimination Plan, etc.), annual reports, and inspection reports should be attached to the SWMP as appendices. Thus, the SWMP should act as a living document that records the permittee’s planned and completed progress toward meeting the MS4 Permit requirements.

The main elements, or minimum control measures (MCMs) of the stormwater management program are (1) a public education program in order to affect public behavior causing stormwater pollution, (2) an opportunity for the public to participate and provide comments on the stormwater program (3) a program to effectively find and eliminate illicit discharges within the MS4 (4) a program to effectively control construction site stormwater discharges to the MS4 (5) a program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls, and (6) a good housekeeping program to ensure that

stormwater pollution sources on municipal properties and from municipal operations are minimized. The hyperlinks provided in Appendix A offer additional information and supporting documents related to the MS4 Permit and the aforementioned minimum control measures.

SECTION 1.4 TOWN SPECIFIC MS4 BACKGROUND

The Town must give special consideration to and meet eligibility requirements for their discharges to be able to apply for coverage under the General Permit. Eligibility will be determined based on three categories: Endangered Species Act, National Historic Preservation Act, and Water Quality Impaired Waters. The Town must establish that discharges from its storm drain system do not adversely impact endangered species, critical habitats, and historic properties in order to be covered by the General Permit. Furthermore, the Town must identify all receiving waters that have been classified as Water Quality Impaired Waters by the Massachusetts Department of Environmental Protection. The Town of Stoughton and its surrounding water bodies are shown on Figure 1: System Locus. The Notice of Intent (NOI) for coverage under the Small MS4 General Permit was submitted to EPA and MassDEP on September 27, 2018. A copy of the NOI is provided in Appendix B.

SECTION 2 SWMP COMPONENTS

SECTION 2.1 PARTIES INVOLVED IN IMPLEMENTATION

The Town has not yet created/staffed a stormwater management position. Alternatively, the Town has established a Stormwater Committee. The members of the Stoughton stormwater committee are listed in the table below. This committee has prioritized detailed goals and concerns regarding implementing of a stormwater program.

Table 2-1: List of Parties Responsible for SWMP Implementation

Name	Title	Department
Marc J. Tisdelle	Town Engineer	Engineering Department
Laurence W. Langlois	GIS Manager / Stormwater Coordinator	Engineering Department
Paul Giffune	Director of Public Works	Public Works Department
Craig A. Horsfall	Assistant Town Engineer	Engineering Department
Craig Horsfall	Town Planner (Interim)	Planning Board
Jack Erickson	Building Commissioner	Building Department
James B. Conlon	Environmental Affairs Officer	Engineering Department
Lawrence Perry	Town Sanitarian	Board of Health
Paul Giffune	Town Facilities Manager	Building Department
Joyce Husseini	Schools Facilities Manager	School Committee

A schedule has been developed in effort to comply with the NPDES Permit requirement and timelines as currently established. The schedule is attached as Appendix C.

SECTION 2.2 DOCUMENTATION REGARDING ENDANGERED SPECIES

In order to comply with part 1.9.1 of the NPDES Permit, the Town has attached documentation in Appendix D supporting Stoughton's eligibility determination of Criterion C with regard to federal Endangered and Threatened Species and Critical Habitat Protection. Criterion C states that, "determination is made by EPA, or by the applicant and affirmed by EPA, that the stormwater discharges and discharge related activities will have "no affect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the USFWS." In this case, USFWS provided a letter in place of a concurrence letter for informal consultation.

The attachments in Appendix D include the aforementioned letter, as well as the results of the Information for Planning and Consultation (IPaC) environmental review process. Using the IPaC environmental review process, one endangered species has been identified within Stoughton's boundaries: the Northern Long-Eared Bat. This species does not have critical habitats designated within the Town, and the MS4 Permit will not adversely affect the listed species within the MS4 area.

SECTION 2.3 DOCUMENTATION REGARDING HISTORIC PROPERTIES

The Town has attached documentation in Appendix E supporting their eligibility determination regarding Historic Properties, in compliance with part 1.9.2 of the Permit. This document, Appendix D of the Massachusetts General MS4 Permit, includes information supporting Stoughton's determination as Criterion A, stating that the discharges do not have the potential to cause effects on historic properties.

Historic site considerations will be evaluated further as part of the design/permitting of new/retrofit BMPs proposed for implementation as part of MS4 compliance. Regarding the National Historic Preservation Act, under 36 CFR 800, this facility is an existing facility authorized by the previous Permit, and is not undertaking any activity involving subsurface land disturbance less than 1 acre. This MS4 Permit will have "no potential to cause effects," in accordance with 36 CFR 800.3(a)(1).

SECTION 2.4 DOCUMENTATION REGARDING DISCHARGES

Attached in Appendix F is the documentation for tracking any new or increased discharges granted by MassDEP in compliance with part 2.1.2 of the Permit. Increased discharges refer to increased pollutant loading(s) through the MS4 to waters of the US or to impaired waters listed in categories 5 or 4b on the Massachusetts Integrated Report of waters, pursuant to the Clean Water Act. The Permit states that "any authorization of an increased discharge by MassDEP shall be incorporated into the permittee's SWMP."

At this time, the Town of Stoughton has no new and/or increased discharges. Stoughton will document any new and/or increased discharges, including any newly located outfall beyond what was listed in the NOI, any new constructed outfall, or any new development increasing flow to existing MS4 outfall structures. These discharges will be documented on the form provided in Appendix F and will include project specific information regarding best management practices implemented for those discharges. A sample discharges form is provided in Appendix F.

SECTION 2.5 SANITARY SEWER OVERFLOW (SSO) INVENTORY

In the event of an overflow or bypass, a notification must be reported within 24 hours by phone to MassDEP, EPA, and other relevant parties. The verbal notification should be followed up with a written report following MassDEP's Sanitary Sewer Overflow (SSO)/Bypass notification form within five calendar days of the time you become aware of the overflow, bypass, or backup. Upon notification of any SSO or septic overflow, the Stoughton Board of Health will take these appropriate measures to comply with Permit requirements.

The Town will maintain an inventory of all known locations where SSOs have discharged to the MS4, if any are found. This inventory shall include SSOs resulting from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for connection of flow between the systems. A SSO inventory form is provided in Appendix G and is updated annually. The inventory includes the following information:

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; and
7. Mitigation and corrective measures planned with implementation schedules.

SECTION 2.6 IDDE PROGRAM AND BYLAWS

The Town's IDDE plan was developed during the first year of the new MS4 Permit (June 2019). The IDDE program is detailed in section 3.3 of Minimum Control Measures. 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). A copy of the Stormwater Management Bylaw and Rules and Regulations for Stormwater Management is provided in Appendix H.

SECTION 2.7 SEDIMENT AND EROSION CONTROL PROCEDURES

Written procedures for the Town's site inspections and enforcement of sediment and erosion control procedures in accordance with part 2.3.5 of the MS4 Permit, Construction Site Stormwater Runoff Control, are detailed in the Sections 3.4 and 3.5, Minimum Control Measures. This information includes the party responsible for site inspections and implementation of procedures.

SECTION 2.8 PUBLIC DRINKING WATER SUPPLY SOURCES PROTECTION

The Town has developed practices in an effort to avoid or minimize impacts to surface public drinking water supply sources. These efforts are detailed in Minimum Control Measures section 3.6, Good Housekeeping and Pollution Prevention. The Town plans to prioritize the enforcement of the existing stormwater pollution prevention plans.

SECTION 2.9 ACTIVITIES TO MONITOR DISCHARGES

The Town identified discharges within public drinking water supply source areas and gave priority to outfall inspections and screening required of the Minimum Control Measures in section 3.0.

SECTION 2.10 ANNUAL PROGRAM EVALUATION

To comply with part 4.1 of the MS4 Permit, the Town annually self-evaluates compliance with the terms and conditions of the MS4 Permit and submits each self-evaluation as part of the Fiscal Year annual report. The NPDES Phase II Small MS4 General Permit Annual Reports for Fiscal Year 2018 through the most recent Fiscal Year are attached in Appendix I.

SECTION 3 MINIMUM CONTROL MEASURES

In effort to reduce pollutants and comply with part 2.3 of the MS4 Permit, the Town focuses on the following six minimum control measures detailed in this section. These sections describe the Town's practices to comply with each control measure, the responsible person(s) or party of each practice, and the goal(s) for each BMP of each control measure. The BMPs for each of the six minimum control measures are outlined in the forms provided in Appendix J.

SECTION 3.1 PUBLIC EDUCATION AND OUTREACH

The Town implemented an education program that includes educational goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program, MS4 Permit part 2.3.2, is to increase knowledge and change behavior of the public so that the pollutants in stormwater are reduced.

The Town implemented a public education program as required by the 2003 permit and continued that program with the necessary adjustments to meet the additional requirements of the 2016 MS4 Permit.

The program includes the education of the following four audiences: (1) residents, (2) businesses, institutions (churches, hospitals), and commercial facilities, (3) developers (construction), and (4) industrial facilities.

Section 3.1.1 Background

The Town has made efforts to incorporate stormwater information into classroom education in Middle and High Schools through presentations by the Engineering Department. During these presentations and seminars, materials are distributed to raise awareness of stormwater issues and maintenance practices. The Engineering Department has also developed a stormwater video called "After the Storm" which has aired on local access television. The Public Works Department works to stencil catch basins and check and re-paint them as necessary while inspecting overall conditions of the catch basins in town. Signs and posters have also been displayed with outreach material written specifically for different types of audiences, including "No-Dumping" signs in all major watershed areas. On Earth Day, the Conservation Commission gives educational presentations to generate public awareness for preventing non-point source pollution in the watershed. The Conservation Commission also works to educate the public on the stormwater benefits of rain barrels and compost generators for storing roof runoff and reducing the volume of solid waste.

Stoughton continues to participate in the Neponset Stormwater Partnership, though which the Town has been able to provide design and survey for stormwater improvements. The Public Works and Engineering Departments also attend multiple stormwater presentations on an annual basis to educate the staff on the MS4 permit requirements. The Town Engineering Department also worked to create an aquifer protection map and educate staff on low impact design of new developments.

The Town will present the stormwater bylaw for public review at a future Town Meeting to make revisions and updates for the new permit requirements.

Section 3.1.2 Best Management Practices

I. Distribution of a minimum of two (2) educational messages over the permit term to the required audiences within the permit term (5 years), as listed below.
   a. Residents
      i. Maintain stormwater website with hyperlinks to stormwater related bylaws.
         1. https://www.stoughton.org/sites/g/files/vyhlif3866/f/uploads/stormwater_management.pdf
      ii. Keep outreach materials at Library and Town Hall and publish on stormwater website, utilizing materials from the DEP, EPA, and relevant stormwater collaborative.
      iii. Consider creating a Town Resident Notification System for stormwater alerts.
      iv. Distribute New Resident packets to residents within Wetland Protection Areas.
      v. Distribute pet waste control information to residents when they (re)apply for a pet license.
      vi. Install educational boards/signs in parks, public open space, near wetlands, etc.
      vii. Continue to perform presentations and provide school materials to Stoughton High School and O'Donnell Middle School.
   b. Businesses, Institutions, and Commercial Facilities
      i. Include stormwater information in permit materials and make available on stormwater website and at Town Hall.
      ii. Make information available on stormwater website and at Town Hall.
      iii. Distribute information to septic maintenance contractors.
   c. Developers (Construction)
      i. Include stormwater information materials as appendix to building and site plan review permit applications.
      ii. Make information available on stormwater website and at Town Hall.
      iii. Distribute information to septic maintenance contractors.
   d. Industrial Facilities
      i. Distribute stormwater information to industrial groups based on zoning and property use.
      ii. Make information available on stormwater website and at Town Hall.

SECTION 3.2 PUBLIC INVOLVEMENT AND PARTICIPATION

The objective of the public involvement and participation control measure, permit part 2.3.3., is for the Town to provide the public with opportunities to engage in activities that promote good stormwater practices. The public has also been given the chance to review the Stormwater Management Plan (SWMP) and its implementation.

Section 3.2.1 Background

Stoughton has created a Stormwater Committee to identify and develop plans to mitigate stormwater problem areas in town. The Town holds a household hazardous waste day each year, and provides opportunities for residents to dispose of unwanted prescriptions to protect the environment. The Ames Pond Citizens Committee and Harris Pond Citizen Committee were formed to increase awareness of the nutrient problems in these ponds and mitigate these nutrient pollutions. The Board of Health (BOH) has made efforts to educate the public on preventing groundwater contamination by maintenance of on-site sewage disposal. In addition, the BOH has developed programs for removing mercury from the municipal solid waste stream, and implementing a program to replace failed septic systems.

The Neponset Stormwater Partnership as well as the Taunton River Watershed both host various events throughout the year for the benefit of the residents.

Section 3.2.2 Best Management Practices

I. Public Review
   a. Stormwater Management Plan Review (SWMP)
      i. Make SWMP available at least annually for public review.
      ii. Create and use Stormwater Website to publish SWMP and annual reports. Website should contain a space for electronically soliciting public comments (e.g. stormwater specific e-mail, message board, etc.)
         1. Stormwater website is located at the following link: https://www.stoughton.org/engineering-office/pages/stormwater-information
         2. Make physical copy available at Town Hall, Library, Public Works Department, etc.

II. Public Participation
   a. Participate in local stormwater groups/associations (e.g. Neponset River Watershed Association, Harris Pond Citizen Committee, Ames Pond Citizens Committee).
   b. Maintain/Acquire membership with local stormwater/water quality committees (e.g. Stormwater Advisory Committee).
   c. Continue to host hazardous waste collection days.
   d. Continue to hold Town clean-up days with various groups.
   e. Stormwater Hotline
      i. Establish a stormwater hotline and publish contact information on stormwater website in order to solicit complaints, questions, etc.

SECTION 3.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

The Town has implemented an IDDE program, per MS4 Permit part 2.3.4, in order to find and eliminate non-stormwater discharge sources. Procedures have been implemented to fix any prevalent issues in the Town's storm sewer system. There are 147 outfall structures that discharge to the Town of Stoughton's MS4 area. These outfall structures are displayed on Figure 2: MS4 Urbanized Areas, and the Town's inventory of outfall structures are shown in Figure 3: Stormwater System Map. Below, Table 3-1 lists the Town's impaired waters, the impairments per water body, and any associated final Total Maximum Daily Load (TMDL) report numbers. Impairments will be discussed further in Section 4.

Table 3-1: Impaired Waters, TMDLs and Impairments

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	2592
Unnamed Tributary	MA73-32	5	Benthic Macroinvertebrates Escherichia coli	54860
Ames Long Pond	MA62001	5	Non-Native Aquatic Plants Aquatic Plants (Macrophytes) Turbidity Fanwort	
Steep Hill Brook	MA73-18	5	Escherichia 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).

Section 3.3.1 Background

The Town has made extensive efforts towards illicit discharge detection and elimination. Phase I stormwater mapping of existing drain facilities in Town has been completed, along with inspections on drainage structures and verification of connectivity. GIS software for this stormwater mapping data has been developed and maintained by the Town's GIS Administrator. This system has streamlined the DPW's work for closed circuit TV (CCTV) inspections of areas with suspect water

quality. The GIS inspection data has also provided information on outfall dry weather flow, which was important in developing the outfall sampling program. All MS4 outfalls have been identified.

An IDDE bylaw for in field inspections of utility tie-ins was developed and approved, and continues to be enforced by the Engineering Department, Board of Health and Public Works Department. The Board of Health has made ongoing efforts to eliminate illicit discharges including the enforcement of Public and Semi-Public swimming pool back wash discharge regulations, enforcement of the commercial and industrial hazardous waste floor drain regulations, and enforcement of the hazardous waste groundwater protection bylaw. There are several stormwater improvement design projects in progress, including the Park Street sewer extension, DPW facility drainage improvements, and curb and berm installation on Canton Street. The DPW also performs stormwater infrastructure replacements or repairs as needed. In 2017 – 2018, the Town continued with the Neponset Stormwater Partnership and provided in-house survey and design as part of the awarded 319 Stormwater Grant through the Neponset River Valley Association for stormwater improvements at Gibbons Elementary School. Additionally, the Town was awarded a DEP Stormwater Grant for 30% Stormwater Improvement Design Plans for three sites in Stoughton (Dawes School, Hansen School, and Central/West Street intersection).

A hydraulic study of the sanitary sewer system and inspections of land that is subject to flooding has been in progress by the Engineering Department, and will continue to be an ongoing effort. IDDE bylaw revisions were presented and approved at the 2021 Town Meeting to meet the requirements of the new permit.

Section 3.3.2 Best Management Practices

I. Legal Authority
    a. The IDDE program shall include 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. Adequate legal authority consists of a currently effective ordinance, by-law, or other regulatory mechanism. This ordinance, by-law, or other regulatory mechanism was a requirement of the MS4-2003 permit and was required to be effective by May 1, 2008. The Town updated the Chapter 159: Stormwater Management Bylaw in 2021.
II. SSO Inventory
    a. Develop SSO Inventory Database within one year of effective permit date that logs historical SSOs that have occurred in the last 5 years, as discussed in further detail in Section 2.5. The inventory has been developed and is updated annually.
        i. Coordinate with Public Works Department for tracking of any future septic or SSOs.

III. Storm Sewer System Map
    a. Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit. Year 2 (Phase I) mapping updates are complete.
        i. Make an electronic and physical copy of the map available to the public via the stormwater website and Town Hall.
        ii. Map/verify 10% of system per year during permit years 1-10.
            1. Phase I will be focused on during Years 1 and 2, while Phase II will be focused on during Years 3 through 10.
        iii. Integrate system map updates with planned utility expansion projects;
        iv. Cross reference drainage information to ensure mapping is as accurate as possible.
        v. Map/verify country drainage (e.g. scuppers), in addition to outfall pipes.

IV. Written IDDE Program Development
    a. Develop and complete written IDDE program within 1 year of effective permit date. The IDDE program and permit attachments is complete. The most updated IDDE Plan is attached to this document as Appendix L and is available within the Town Hall at 10 Pearl Street, Stoughton, MA 02072.
        i. The written plan includes but is not limited to the following:
            1. Outline of responsibilities,
            2. Storm sewer map with locations of know outfalls, including information on relevant connectivity data gaps,
            3. Systematic procedure/protocol to detect and eliminate illicit discharges,
            4. Assessment/ranking of catchments (based on complaints, past water quality data, adjacent failing septic/sewer systems, surrounding area, TMDL surface waters), and
            5. Tracking mechanism to evaluate and report on the overall effectiveness of the IDDE program.

V. Implement IDDE Program
    a. Implement catchment investigations according to program and permit conditions within 15 months of the effective date of the Permit. Catchment investigations procedures have been written and included in the Town's IDDE Plan.
        i. Continue to enforce bylaw.
        ii. Draft and implement stormwater management regulations. These have been drafted.
        iii. Coordinate water quality monitoring with dry weather screening.
            1. New monitoring system should include surveying for illicit discharge detection.

VI. Employee Training
    a. Coordinate annual stormwater training and incorporate with training required in Section 6.2.IV.B of the MS4 Permit. Regular annual training has been provided to the Town.

VII. Dry Weather Screening
    a. Conduct screening in accordance with outfall screening procedure and permit conditions. Screenings are complete.

VIII. Conduct Wet Weather Screening
    a. Conduct screening in accordance with outfall screening procedure and permit conditions, and as determined by dry weather screening results, within ten years of effective permit date. Wet weather screening have been started.
    b. To identify areas with higher potential for illicit connections, the permittee shall identify the presence of any of the following System Vulnerability Factors (SVFs):
        i. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages;
        ii. Common or twin-invert manholes serving storm and sanitary sewer alignments;
        iii. Common trench construction serving both storm and sanitary sewer alignments;
        iv. Crossings of storm and sanitary sewer alignments where the sanitary sewer system is shallower than the storm drain system;
        v. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
        vi. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints;
        vii. Areas formerly served by combined sewer systems; and
        viii. 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.

IX. Conduct ongoing screening as necessary, and upon completion of the IDDE program.

X. IDDE Regulations
    a. Continue to eliminate illicit discharge violations.

SECTION 3.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

The Town must implement a program focused on controlling stormwater runoff from construction sites. The program shall minimize or eliminate erosion on site and maintain the site so that the sediment is not transported in stormwater or allowed to discharge to a water of the U.S. through the Town's MS4, as stated in part 2.3.5 of the Permit.

Section 3.4.1 Background

The Town enforces submittal of Stormwater Pollution Prevention Plans for all projects greater than one acre in size, and a comprehensive review of all construction documents. For projects less than one acre in size, the Town performs a comprehensive stormwater review to ensure compliance with local and state stormwater requirements. All site development plans are required to provide proper

erosion controls and comply with the DEP Stormwater Management Regulations. The Conservation Commission works to reduce non-point source pollution by implementing a vegetated buffer area on construction activities. In order to make site inspections more efficient, the Engineering Department created stormwater inspection applications to upload all inspection data to the GIS system and store that information based on the location of the inspection.

Section 3.4.2 Best Management Practices

I. Site Inspection and Enforcement of Erosion and Sediment Control (ESC) Measures.
    a. Complete written procedures of site inspections and enforcement procedures within 1 year of effective date of the Permit. These have been prepared.
        i. Recommend standards and practices for Town inspection procedures. Seek input from relevant town groups (e.g. Conservation Commission, Public Works Department, Building Department, etc.).
        ii. Develop inspection form that includes ESC measures and integrate them with existing Town forms.

II. Site Plan Review
    a. Complete written procedures of site plan review and begin implementation within 1 year of the effective date of the Permit. These have been prepared.
        i. Include site plan review workflow chart with permit applications.
        ii. Review current Town procedure regarding when a Construction General Permit (CGP) is needed.
            1. CGP required for disturbance of 1 acre or greater.

III. Erosion and Sediment Control Ordinance
    a. Adoption of requirements for construction operators to implement a sediment and erosion control program within 1 year of the effective date of the Permit.
        i. Require all projects with a CGP to conduct erosion and sediment control inspections as described within the Rules and Regulations for Stormwater Management.
        ii. Update Town inspection forms with erosion and sediment control checklist.
        iii. Continue to implement Soil and Erosion Control requirements listed in the Rules and Regulations for Stormwater Management.
        iv. Continue to monitor all construction activities within the Town of Stoughton for erosion and sediment control issues.

IV. Waste Control
    a. Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes within 1 year of the effective date of the Permit.
        i. Incorporate into Town's general conditions for building permit and/or site plan review.
        ii. Review and modify Town bylaw to meet new requirements.

V. Pre-Construction/Coordination Meetings
    a. Continue GIS mapping and develop protocol for submitting as-builts electronically.

SECTION 3.5 POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

The objective of an effective post construction stormwater management program, part 2.3.6 of the Permit, is to reduce the discharge of pollutants found in stormwater to the MS4 through the retention or treatment of stormwater after construction on new or redeveloped sites and to ensure proper maintenance of installed stormwater controls.

Section 3.5.1 Background

The Town's Stormwater Committee drafted a revised stormwater management bylaw that was approved by Town Meeting in 2021. The new bylaw – Chapter 259: Stormwater Management Bylaw – is consistent with the 2018 MS4 Permit and 2020 Revisions. Additionally, Rules and Regulations for Stormwater Management was drafted and adopted by Town Council in October 2021. Each new project is now reviewed prior to construction and post-construction operation and maintenance manuals are required to be submitted prior to project approval.

In Year 4, the Town assessed local bylaws to determine the feasibility of constructing green infrastructure practices as well as the creation of impervious cover. These two assessments are included in Appendix P. The Town has reviewed this assessment and is reviewing what follow-up steps need to be taken, including revising existing bylaws. Additionally, the Town maintains a list of five (5) permittee-owned properties to prioritize for BMP retrofits. Details on the prioritization of municipal properties for BMP retrofits are included in Appendix P.

Section 3.5.2 Best Management Practices

I. Post-Construction Ordinance
    a. The Town shall develop or modify, as appropriate, an ordinance or other regulatory mechanism within two (2) years of the effective date of the permit. This is complete.

II. As-Built Plans For On-Site Stormwater Control
    a. Require submission of electronic data for as-built drawings (e.g. PDF, AutoCAD, GIS) within 2 years of completed construction. As-built plans are required as part of the regulations.
        i. O&M certification should include contact and contract information for contractors that perform O&M on the private BMPs.

III. Inventory and Priority Ranking of MS4-Owned Properties That May Be Retrofitted with BMPs
    a. Conduct detailed inventory of MS4 owned properties and rank for retrofit potential within 4 years of permit effective date. Priority ranking is complete and included in Appendix P.
        i. Inventory Town parcels for existing stormwater BMPs and identify opportunities for GI/LID retrofits.
            1. Include schools, parks, recreation facilities, police/fire/EMS, libraries, public works, and town administrative offices.

IV. Allow Green Infrastructure
    a. Within 4 years of permit effective date, develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist. The assessment is complete and included in Appendix P.
        i. Review bylaws and applications in order to incorporate green infrastructure and low impact development language as needed.
        ii. Educate the public on green infrastructure through existing BMP retrofits/demonstration projects.

V. Street Design and Parking Lot Guidelines
    a. Within 4 years of permit effective date, develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options. The assessment is complete and included in Appendix P.
        i. Publish street design and parking lot guidelines on stormwater website.

VI. Ensure any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality. This item was completed through the adoption of the Bylaws and Rules and Regulations
    a. Within 2 years of permit effective date, adopt, amend, or modify regulation mechanisms to meet permit requirements.
        i. Review rules and regulations and modify as needed. Include evaluation of subdivision/redevelopment requirements to keep stormwater runoff onsite and for long-term operations and management of private BMPs.
        ii. Continue to implement Post-Construction Site Runoff Control Bylaw.
        iii. Continue to require submission of long term O&M pollution prevention plans for all developments greater than an acre.
        iv. Continue to enforce asbestos removal bylaw.
        v. Continue to enforce lead paint removal bylaw.
        vi. Continue to enforce compliance with local Conservation and Stormwater bylaws and regulations.

VII. Monitor construction impacts on amount of impervious surfaces. This work is ongoing.
    a. Record pre/post-construction changes to amount of impervious surface.
        i. Require submittal of impervious area data with as-built records.
            1. Projects should report quantities of impervious area per and post-construction, along with the net increase/decrease of impervious area.

SECTION 3.6 GOOD HOUSEKEEPING AND POLLUTION PREVENTION FOR PERMITTEE OWNED OPERATIONS

The objective of this control measure, part 2.3.7 of the Permit, states that the permittee shall implement an operations and maintenance program for Town-owned operations that shall focus on preventing or reducing pollutant runoff and protecting water quality from Town operations.

Section 3.6.1 Background

Catch basin cleaning, street sweeping and swale maintenance are all performed by the DPW to reduce stormwater pollution. The DPW also ensures that all hazardous materials are stored inside, and a "no exposure" rating from EPA was obtained. To eliminate inflow and infiltration, the DPW is constantly fixing all sewer pipes with leakage issues repairing sewer piping to reduce inflow and infiltration.

The Conservation Commission requires pesticide-free landscaping practices as a special requirement in the Orders of Conditions, and the Commission also developed a Hydro-raking Program to mitigate the extensive exotic vegetation problem at Ames Long Pond. The DPW is also in the process of formalizing operations and techniques for catch basin cleaning, street sweeping and winter road maintenance.

Section 3.6.2 Best Management Practices

I. Create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment within 2 years of permit effective date. Completed.
    a. Develop standards of practice for O&M of each public facility and combine in Town O&M Manual.

II. Maintain and update inventory of all permittee-owned parks and open spaces, buildings and facilities (including their storm drains), and vehicles and equipment within 2 years of the permit effective date. Completed.
    a. Develop a capital improvement plan that deals with flooding prevention measures and water quality improvements.
        i. Coordinate implementation with Section 5.2.II of the Permit.

III. Establish and implement program for repair and rehabilitation of MS4 infrastructure within 2 years of the permit effective date.
    a. Inspect assets and assess condition to develop program.
    b. Review annual budget to set aside funding.

IV. Stormwater Pollution Prevention Plan (SWPPP) For Maintenance Garages, Transfer Stations and Other Waste-Handling Facilities. Completed.
    a. Develop plan within 2 years of permit effective date.
    b. Schedule annual employee training.
        i. Continue to look into workshop and speaking opportunities and seek formal training for all departments.
    c. Inspect facilities quarterly.

d. Develop an asset management system to process complaints, permits, inspections, and maintenance.
e. Continue to implement improved recycling standards and requirements.

V. Catch Basin Cleaning (ongoing annually)
   a. Develop and maintain an annual cleaning schedule.
   b. Develop electronic data collection system for tracking, inspection, and maintenance.
      i. Update catch basin cleaning services RFP requirements to require electronic data collection that is compatible with the Town's GIS and asset management system.

VI. Street Sweeping Program (ongoing annually)
   a. Continue to implement street sweeping program, sweeping streets a minimum of once annually in the spring, except in the Taunton River Watershed, where streets must be swept twice yearly due to the nitrogen impairment.
   b. Include number of miles of streets cleaned per year, and volume or mass or material removed in each annual stormwater report (rural and uncurbed exceptions apply).

VII. Road Salt Use Optimization Program/Winter Road Maintenance (ongoing annually)
   a. Continue working on salt reduction strategies.
      i. Continue to develop and implement winter road maintenance procedures including use and storage of salt and sand.
      ii. Continue to minimize the use of salts and ensure that snow is not disposed in water ways.
      iii. Calibrate spreaders to reduce salt use.

VIII. Inspection and maintenance of stormwater treatment structures (ongoing annually)
   a. Establish and implement inspection and maintenance procedures for annual inspection/maintenance.

IX. Norfolk County Mosquito Control Project
   a. Coordinate annual meeting with Control Project Staff to discuss potential stormwater impacts from mosquito control applications and potential BMP retrofits that can minimize standing water in catch basins (e.g. leaching structures).

X. Massachusetts Department of Transportation
   a. Coordinate annual meeting with MassDOT District 5 Staff to discuss stormwater system interconnections, common receiving waters, and opportunities for collaboration.

SECTION 4 WATER QUALITY BASED REQUIREMENTS

In compliance with the Clean Water Act (CWA), each state must administer a program to monitor and assess the quality of its surface and groundwater. Section 305(b) process of the CWA entails assessing each use for rivers, lakes, and coastal waters, and causes and sources of impairment are identified wherever possible. Section 303(d) of the CWA along with the regulations at 40 CFR 130.7 requires states to identify those water bodies that are not expected to meet surface water quality standards (SWQS) after the implementation of technology based controls, and prioritize them for the development of Total Maximum Daily Loads (TMDLs). A TMDL establishes the maximum amount of a pollutant that may be introduced into a water body and still ensure attainment and maintenance of water quality standards. The 303(d) List of Impaired Waters (303(d) List) lists each water body in one of the following five categories:

Category 1.	Unimpaired and not threatened for all designated uses;
Category 2.	Unimpaired for some uses and not assessed for others;
Category 3.	Insufficient information to make assessments for any uses;
Category 4.	Impaired or threatened for one or more uses, but not requiring the calculation of a TMDL; or
Category 5.	Impaired or threatened for one or more uses and requiring a TMDL.

Waters listed in Category 5 constitute the 303(d) List and are to be reviewed and approved by the EPA. Table 3-1: Impaired Waters, TMDLs and Impairments details the Town's Category 5 and 4 water bodies. An overall map of the Town of Stoughton's stormwater system is attached as Figure 3: Stormwater System Map.

SECTION 4.1 BACKGROUND

Best management practices aim to improve and mitigate stormwater water quality impairments. The Town of Stoughton has 58 outfalls located within the Boston Harbor: Neponset Watershed, 76 outfalls located within the Taunton River Watershed, and 13 outfalls located within the Boston Harbor: Weymouth & Weir Watershed. This program will focus on impaired waters requiring a TMDL (Category 5) in the Taunton River Watershed and the Boston Harbor: Neponset Watershed, shown on Figure 3.

There are four (4) Category 5 water segments in Stoughton requiring a TMDL.

1) Beaver Meadow Brook (MA73-20) is a 3.3 mile segment, which outlets from Glenn Echo Pond, and is impaired due to dissolved oxygen. It also has a finalized TMDL report for E. coli.
2) A one mile segment of Unnamed Tributary (MA73-32) from the outlet of Town Pond to the confluence of Steep Hill Brook has an impairment for benthic macroinvertebrates. It has a finalized TMDL for E. coli as well. Both Beaver Meadow Brook and the Unnamed Tributary are located within the Boston Harbor: Neponset Watershed.

3) Ames Long Pond (MA62001), located within the Taunton Watershed, is impaired for aquatic plants (macrophytes), fanwort, non-native aquatic plants, and turbidity. This waterbody, MA62001, is approximately 87.7 acres. The turbidity impairment requires the Town to adhere to requirements in part B of Appendix H of the Permit. Turbidity falls under solids, oil and grease, or metals impairment requirements which are listed below (Section 4.2.2) and in Appendix J.
4) Steep Hill Brook (MA73-18) was previously a Category 3 ("No uses assessed") waterbody when the original SWMP and NOI were drafted. In the 2018/2020 Integrated List of Waters, this river is listed as having an E. coli impairment that lacks a final TMDL. This waterbody starts at Pinewood Pond and ends at Bolivar Pond, Canton. It's approximately 0.9 miles in length and is located within the Boston Harbor: Neponset Watershed.

The Taunton River Watershed has a watershed-wide EPA approved TMDL requirement for pathogens. This impairment requires Stoughton to follow the requirements listed below to mitigate pathogen discharges to the MS4. The Town should prioritize sampling their 76 outfalls within the Taunton River Watershed for bacteria and pathogens. In addition, the Taunton River Watershed has a nitrogen impairment that lacks a final TMDL report. All discharges in the Taunton River Watershed must also be tested for nitrogen and the Town must adhere to requirements listed in part I of Appendix H of the Permit.

There are 13 outfalls in Town that are located within the Boston Harbor: Weymouth & Weir Watershed. This watershed has a watershed-wide EPA-approved TMDL for pathogens. Thus Stoughton must follow the requirements for pathogens in Appendix F of the Permit (and discussed in Section 4.2 below) to mitigate contaminated discharges to the MS4.

There are 58 outfalls in Town that are located within the Boston Harbor: Neponset Watershed. This watershed has a watershed-wide EPA-approved TMDL for bacteria. Stoughton must follow the requirements for bacteria in Appendix F of the Permit (discussed in Section 4.2 below) to mitigate contaminated discharges to the MS4.

Section 4.1.1 Update to the Town's Phosphorus Impairment

The Unnamed Tributary (MA73-32), flowing north from Town Pond to Canton, had a phosphorus impairment in the 2014 Integrated List of Waters. This List of Waters is published by the Massachusetts Department of Environmental Protection (MassDEP) and updated every two years. On February 2, 2022, the newest 2018/2020 Integrated List of Waters was finalized and removed the phosphorus impairment from the unnamed tributary.

According to part II.3 of Appendix H, the Town is relieved of its Appendix H part II phosphorus requirements if the waterbody is no longer impaired by phosphorus. Further, all part II phosphorus requirements due before the date of inapplicability are still required; all requirements due after the date of inapplicability are no longer required. Thus, starting in Year 4 and onward, the Town of Stoughton no longer has a phosphorus impairment.

SECTION 4.2 PERMIT REQUIREMENTS

Section 4.2.1 Public Education and Outreach

A. Nitrogen (implementation is ongoing)
    1. Distribute an annual message in the spring (April/May) timeframe that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers.
    2. Distribute an annual message in the summer (June/July) timeframe encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.
    3. Distribute an annual message in the fall (August/September/October) timeframe encouraging the proper disposal of leaf litter.

A. Bacteria and Pathogens (implementation is ongoing)
    1. Distribute an annual message that encourages the proper management of pet waste, including noting any existing ordinances where appropriate.
    2. Disseminate educational materials to dog owners at the time of issuance or renewal of dog license, or other appropriate time.
    3. Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens.

Section 4.2.2 Stormwater Management in New Development and Redevelopment

A. Nitrogen
    1. Include a requirement that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal. This is included in the new Bylaws and Rules and Regulations.
    2. Retrofit inventory and priority ranking under 2.3.6.1.b shall include consideration of BMPs to reduce nitrogen discharges. Completed.

B. Solids (Turbidity)
    1. Incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or unexpected event.
    2. Require any stormwater management system designed to infiltrate stormwater on commercial or industrial sites to provide the level of pollutant removal equal to or greater than the level of pollutant removal provided through the use of biofiltration of the same volume of runoff to be infiltrated, prior to infiltration.

Section 4.2.3 Good Housekeeping and Pollution Prevention

A. Nitrogen
    1. Establish requirements for use of slow release fertilizers on permittee owned property currently using fertilizer, in addition to reducing and managing fertilizer use as provided in 2.3.7.1. Completed.

2. Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces. Completed.
3. Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year, once in the spring (following winter activities such as sanding) and at least once in the fall (September 1 to December 1, or following leaf fall) . Completed.

B. Solids (Turbidity)
1. Increase street sweeping frequency of all municipal owned streets and parking lots to a schedule determined by the permittee to target areas with potential for high pollutant loads. Completed.
2. Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full. Each annual report shall include the street sweeping schedule determined by the permittee to target high pollutant loads. Completed.

Section 4.2.4 Illicit Discharge

A. Bacteria and Pathogens
1. Implement the illicit discharge program required by the Permit. Catchments draining to any water body impaired for bacteria or pathogens shall be designated either Problem Catchments or HIGH priority in implementation of the IDDE program. Completed.

Section 4.2.5 Additional Requirements (Nitrogen)

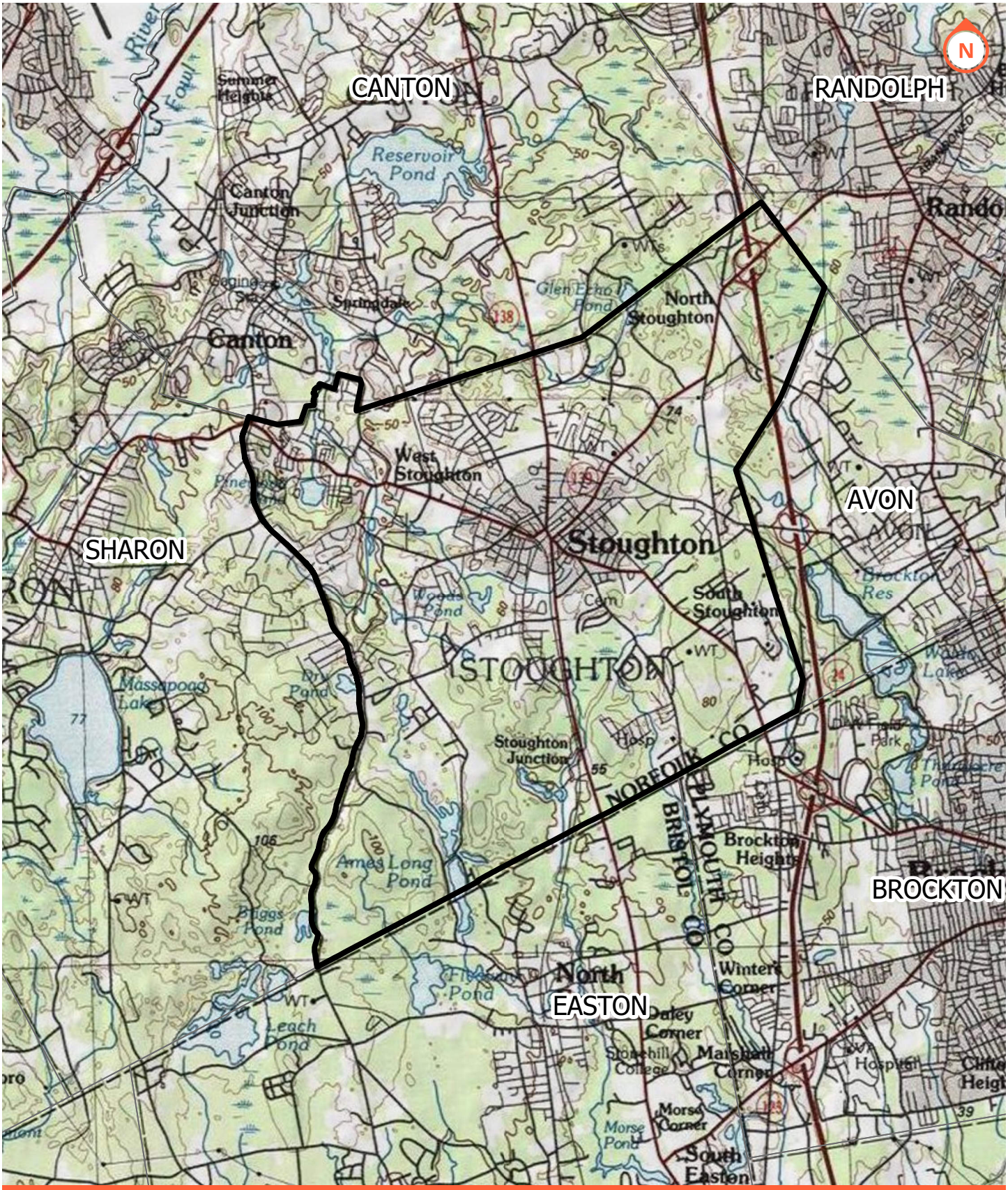
A. Nitrogen
1. Within four years of the permit effective date the permittee shall complete a Nitrogen Source Identification Report. The report is completed. It includes the following elements:
    i. Calculation of total MS4 area draining to the water quality limited segments of their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to part 2.3.4.6,
    ii. All screening and monitoring results pursuant to part 2.3.4.7.d, targeting the receiving water segment(s),
    iii. Impervious area and DCIA for the target catchment,
    iv. Identification, delineation, and prioritization of potential catchments with high nitrogen loading, and
    v. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.
2. The final Nitrogen Source Identification Report shall be submitted to EPA as part of the year 4 annual report.
3. Within five years of the permit effective date, the permittee shall evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under permit part 2.3.6.d.ii. Or identified in the

Nitrogen Source Identification Report that are within the drainage area of the impaired water or its tributaries.

4. The permittee shall provide a listing of planned structural BMPs and a plan and schedule for implementation in the year 5 annual report.
5. The permittee shall plan and install a minimum of one structural BMP as a demonstration project within the drainage area of the water quality limited water or its tributaries within six years of the permit effective date. The demonstration project shall be installed targeting a catchment with high nitrogen load potential.
6. The permittee shall install the remainder of the structural BMPs in accordance with the plan and schedule provided in the year 5 annual report.
7. Any structural BMPs listed in Table 3 of Attachment 1 to Appendix H already existing or installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the nitrogen removal by the BMP consistent with Attachment 1 to Appendix H. The permittee shall document the BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated nitrogen removed in mass per year by the BMP in each annual report.

At any time during the permit term, the Town may be relieved of additional requirements in Appendix H applicable to it when in compliance with the requirements in Appendix H.

FIGURE 1
System Locus



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 1
System Locus
Stoughton, Massachusetts
9/16/2022

0 2,500 5,000 10,000 Feet
1:70,000

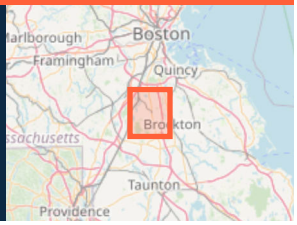
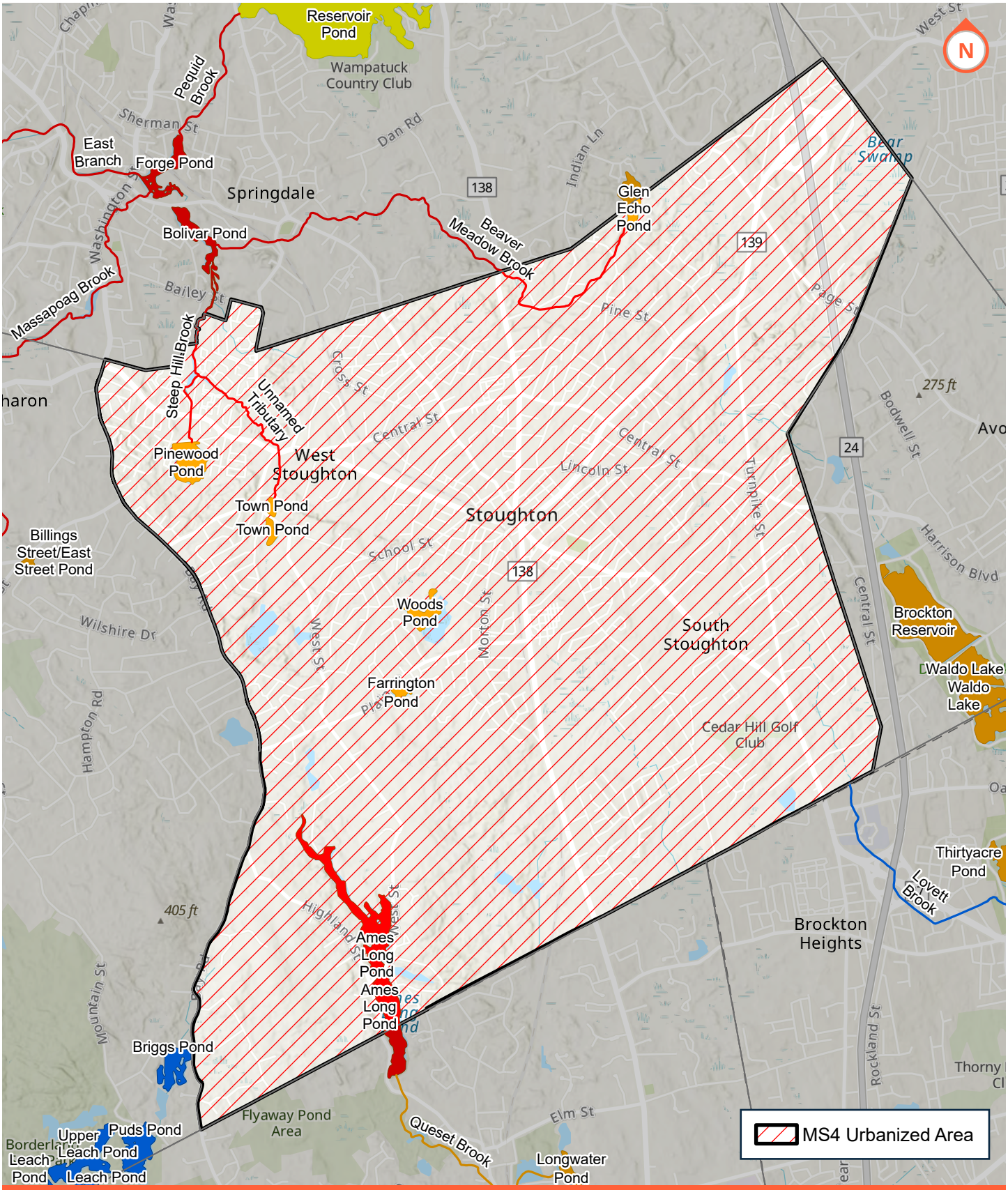


FIGURE 2
MS4 Urbanized Areas



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 2
Urbanized Areas
Stoughton, Massachusetts
8/31/2022

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1:50,000
Feet

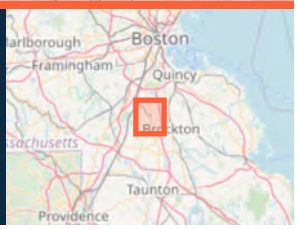
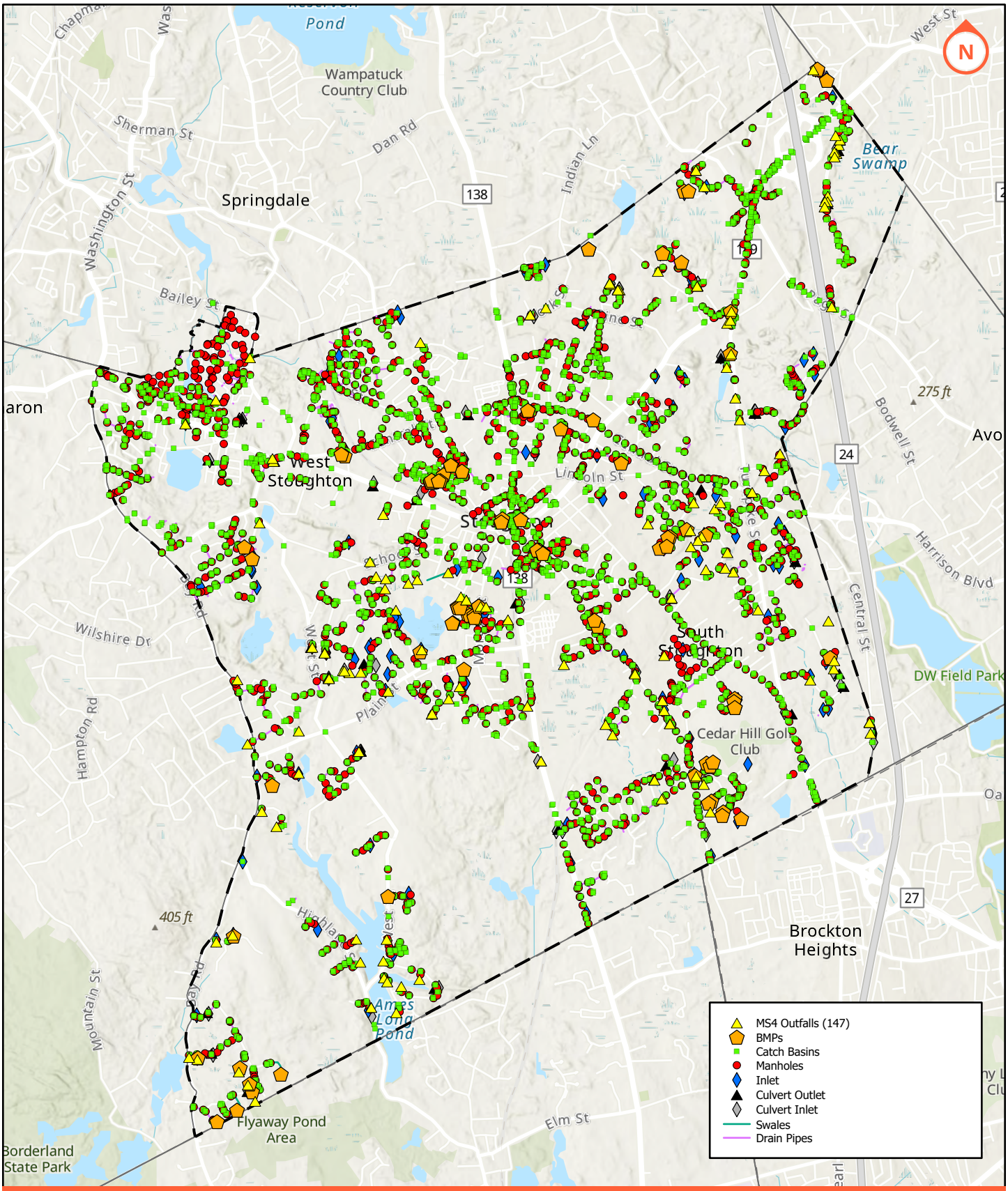


FIGURE 3
Stormwater System Map



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 3
Stormwater System
Stoughton, Massachusetts
8/31/2022

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Feet
1:50,000

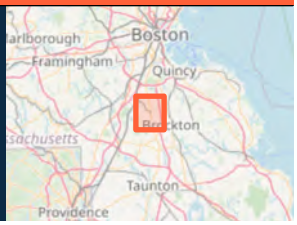
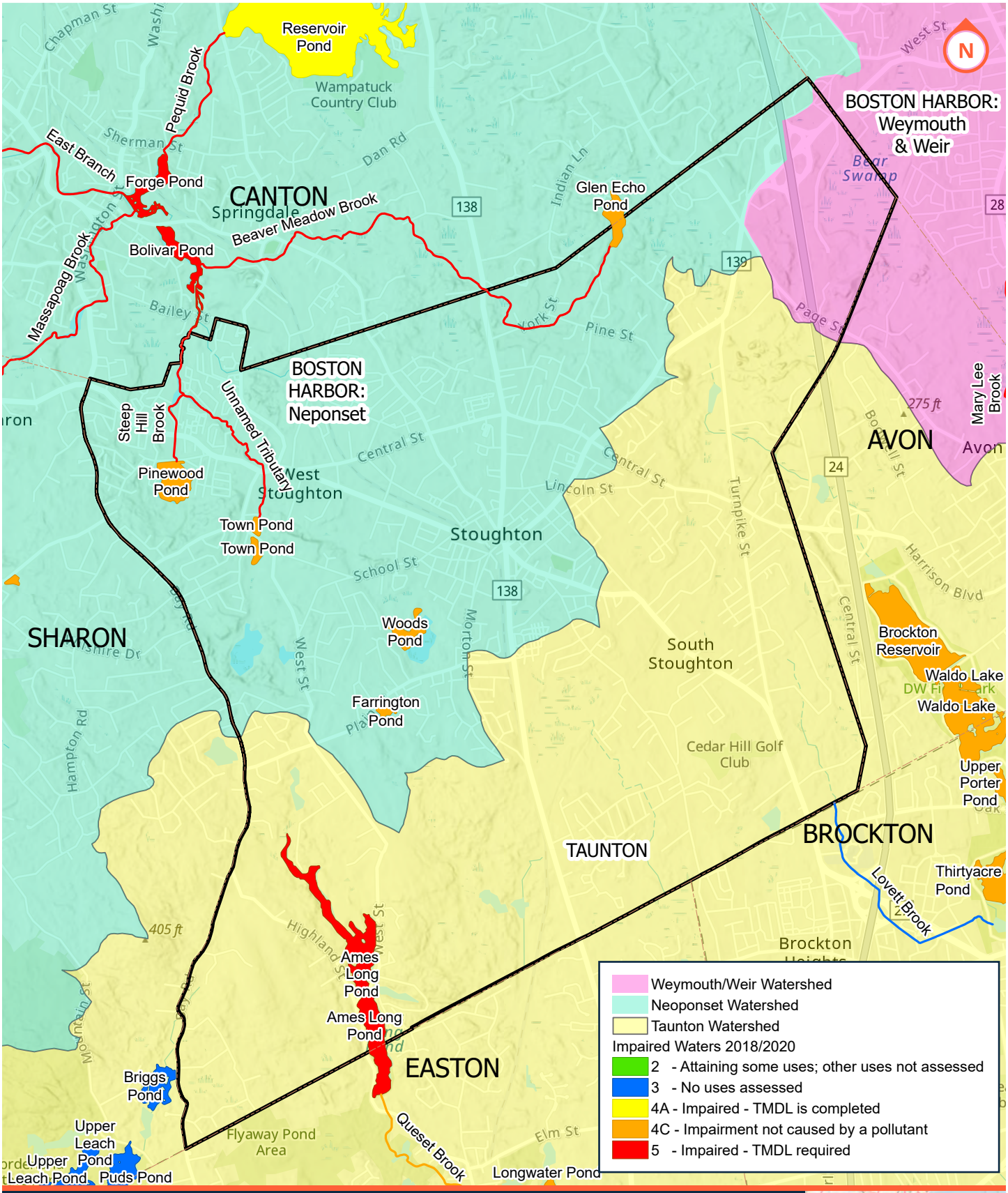


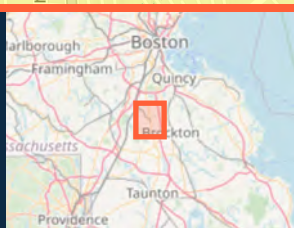
FIGURE 4
Town Watersheds



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 4
Town Watersheds
Stoughton, Massachusetts
8/31/2022

0 2,500 5,000 10,000 Feet 1:50,000



APPENDIX A
MA MS4 Hyperlinks and References

MA MS4 General Permit Hyperlinks

General Hyperlinks

EPA MA MS4 Permit: https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit

DEP Permit: http://www.mass.gov/eea/agencies/massdep/water/wastewater/stormwater.html#8

Town Hyperlink: https://www.stoughton.org/engineering-office/pages/stormwater-information

MCM 1: Public Education and Outreach

EPA's Stormwater Education Toolbox, MassDEP's stormwater outreach materials, and other templates relevant to MCM 1 can be found here:
https://www.epa.gov/npdes-permits/stormwater-tools-new-england#peo

MCM 3: Illicit Discharge Detection and Elimination (IDDE) Program

IDDE Program Template, SOPs, and other templates relevant to IDDE can be found here:
https://www.epa.gov/npdes-permits/stormwater-tools-new-england#idde

MCM 4: Construction Site Stormwater Runoff Control

Examples and templates relevant to MCM 4, including model ordinances and site inspection templates, can be found here:
https://www.epa.gov/npdes-permits/stormwater-tools-new-england#csrc

MCM 5: Post Construction Stormwater Management in New Development and Redevelopment

Examples and templates relevant to MCM 5, including model ordinances and bylaw review templates and guidance can be found here:
https://www.epa.gov/npdes-permits/stormwater-tools-new-england#pcsm

MCM 6: Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Examples and templates relevant to MCM 6, including SOP templates for catch basin cleaning, street sweeping, vehicle maintenance, parks and open space management, winter deicing, and Stormwater Pollution Prevention Plans can be found here:
https://www.epa.gov/npdes-permits/stormwater-tools-new-england#gh

APPENDIX B

Notice of Intent

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part I: General Conditions

General Information

Name of Municipality or Organization: Stoughton State: MA

EPA NPDES Permit Number (if applicable): MAR041063

Primary MS4 Program Manager Contact Information

Name: Marc J. Tisdelle, P.E. Title: Town Engineer

Street Address Line 1: Town Hall

Street Address Line 2: 10 Pearl Street

City: Stoughton State: MA Zip Code: 02072

Email: mtisdelle@stoughton-ma.gov Phone Number: (781) 341-1300

Fax Number: (781) 341-1086

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed): Engineering Office, 10 Pearl Street, Stoughton, MA; www.stoughton.org/engineering office/pages/stormwater-information

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Yes Eligibility Criteria (check all that apply): ☐ A ☐ B ☒ C

National Historic Preservation Act (NHPA) Determination Complete? Yes Eligibility Criteria (check all that apply): ☒ A ☐ B ☐ C

☑ Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

MS4 Infrastructure (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete? *(Part II, III, IV or V, Subpart B.3.(a.) of 2003 permit)* 100%

If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY):

Web address where MS4 map is published:

If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with NOI submission (see section V for submission options)

www.mapsonline.net/stoughtonma/new_public_site.html

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? *(Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)* Yes

Effective Date or Estimated Date of Adoption (MM/DD/YY): 05/24/06

Construction/Erosion and Sediment Control (ESC) Authority Adopted? *(Part II,III,IV or V, Subpart B.4.(a.) of 2003 permit)* Yes

Effective Date or Estimated Date of Adoption (MM/DD/YY): 05/24/06

Post- Construction Stormwater Management Adopted? *(Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)* Yes

Effective Date or Estimated Date of Adoption (MM/DD/YY): 05/24/06

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbody segments to which your MS4 discharges. For each waterbody segment, please report the number of outfalls discharging into it and, if applicable, any impairments.

Massachusetts list of impaired waters: Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf

Check off relevant pollutants for discharges to impaired waterbodies (see above 303(d) lists) without an approved TMDL in accordance with part 2.2.2.a of the permit. List any other pollutants in the last column, if applicable.

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Ames Long Pond (MA62001)	12	☐	☐	☐	☐	☐	☐	☒	☐	☐	Non-Native Aquatic Plants, Aquatic Plants (Macrophytes)
Beaver Brook	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	Aquatic Macroinvertebrate Bioassessments
Beaver Meadow Brook (MA73-20)	13	☐	☐	☒	☐	☐	☐	☐	☐	☐	
Bolivar Pond (MA73005)	1	☐	☐	☐	☐	☐	☐	☒	☐	☐	
Briggs Pond (MA62021)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Dorchester Brook	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Dry Pond	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
East Branch Neponset River	31	☐	☐	☒	☐	☐	☐	☐	☒	☐	Aquatic Macroinvertebrate Bioassessments, Fecal Coliform, DDT, PCB in Fish Tissue
Lovett Brook (MA62-46)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Plain Street Pond	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Steep Hill Brook (MA73-18)	16	☐	☐	☐	☐	☐	☐	☐	☒	☐	(TMDL taken from Massachusetts 2016 List of Impaired Waters)
Town Pond (MA73056)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	Non-Native Aquatic Plants
Woods Pond (MA73055)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	Non-Native Aquatic Plants
Unnamed Pond near Three Swamp Brook (42.14348, -71.06517)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Pond near Woods Pond (42.11081, -71.11629)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary near Dorchester Brook (42.10344, -71.08098)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary near Woods Pond (42.11013, -71.10934)	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Ames Long Pond (42.09003, -71.13424)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Unnamed Tributary to Ames Long Pond (42.10058, -71.13084)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary To Beaver Brook (42.14530, -71.08055)	11	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.12766, -71.07440)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.13174, -71.08156)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.12881, -71.07807)	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.12501, -71.08639)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.10906, -71.08463)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.11375, -71.08459)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Brook (42.11762, -71.08405)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Meadow Brook (42.14060, -71.11240)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Brockton Reservoir (42.12119, -71.07132)	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Dorchester Brook (42.11301, -71.09610)	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Queset Brook (42.07672, -71.13212)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Steep Hill Brook (MA73-32) (42.13416, -71.13259)	9	☐	☐	☐	☐	☐	☒	☐	☒	☐	Aquatic Macroinvertibrate Bioassessments, Low pH
Unnamed Tributary to Steep Hill Brook (42.11858, -71.10726)	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Steep Hill Brook (42.12042, -71.11649)	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Town Pond (42.11410, -71.12355)	11	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Town Pond (42.10567, -71.11967)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Unnamed Tributary (42.15792, -71.06823)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to Beaver Brook (42.15518, -71.08070)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to Beaver Brook (42.12118, -71.07754)	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to Three Swamp Brook (42.15629, -71.06474)	12	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands near Beaver Meadow Brook (42.14179, -71.09929)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands near Lovett Brook (42.11384, -71.06507)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands near Lovett Brook (42.10794, -71.06107)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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		☐	☐	☐	☐	☐	☐	☐	☐	☐	

Click to lengthen table

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	**BMP Description**	**Targeted Audience**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal**	**Beginning Year of BMP Imple-mentation**
Brochures/Pamphlets	Distribution of a minimum of two (2) educational messages over the permit term	Residents	DPW Operations, Engineering, Neponset River Watershed Association	Continue to circulate information of stormwater pollution awareness and pet waste management	2018
Brochures/Pamphlets	Distribution of a minimum of two (2) educational messages over the permit term	Businesses, Institutions and Commercial Facilities	DPW Operations, Engineering, Neponset River Watershed Association	Continue to circulate information of stormwater pollution awareness	2018
Brochures/Pamphlets	Distribution of a minimum of two (2) educational messages over the permit term	Developers (construction)	DPW Operations, Engineering, Neponset River Watershed Association	Continue to circulate information of stormwater pollution awareness	2018
Brochures/Pamphlets	Distribution of a minimum of two (2) educational messages over the permit term	Industrial Facilities	DPW Operations, Engineering, Neponset River Watershed Association	Continue to circulate information of stormwater pollution awareness	2018
Web Page	Maintain stormwater website; Provide outreach materials on website; Consider creating a Town Resident Notification System for stormwater alerts (e.g. severe weather, flooding)	Residents	DPW Operations, Engineering, Neponset River Watershed Association	Continue to maintain stormwater website	2018

Web Page	Maintain stormwater website; Provide outreach materials on website; Consider creating a Town Resident Notification System for stormwater alerts (e.g. severe weather, flooding)	Businesses, Institutions and Commercial Facilities	DPW Operations, Engineering, Neponset River Watershed Association	Continue to maintain stormwater website	2018
Web Page	Maintain stormwater website; Provide outreach materials on website; Consider creating a Town Resident Notification System for stormwater alerts (e.g. severe weather, flooding)	Developers (construction)	DPW Operations, Engineering, Neponset River Watershed Association	Continue to maintain stormwater website	2018
Web Page	Maintain stormwater website; Provide outreach materials on website; Consider creating a Town Resident Notification System for stormwater alerts (e.g. severe weather, flooding)	Industrial Facilities	DPW Operations, Engineering, Neponset River Watershed Association	Continue to maintain stormwater website	2018
School Curricula/Programs	Classroom Education	Residents	Engineering, Neponset River Watershed Association	1. Stormwater presentation to Middle and High Schools 2. Provide Schools with Stormwater Materials	2018
Special Events/Festivals/Fairs	Household haz. waste/used oil collection	Residents	DPW Operations, Engineering	Continue to host annual household hazardous waste collection events at O'Donnell Middle School	2018

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Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Implementation
Public Review	SWMP Review	Engineering	Allow annual review of stormwater management plan and posting of stormwater management plan on website	2018
Public Participation	SWMP Review	Engineering	Allow public to comment on stormwater management plan annually	2018
Public Participation	Hotline/webline - reporting problems/violations	DPW Operations, Neponset River Watershed Association	Publish contact on stormwater for soliciting complaints, questions, etc.	2018
Public Review	Stormwater Committee/Task Force	Board of Selectmen	Created Stormwater Committee consisting of members of PWD, Engineering and Conservation Commission Department. Major focus to identify stormwater related problem areas in Town and develop game plan for correcting problem and to comply with EPA requirements.	2018
Public Review	Review NOI	Engineering	Stormwater goals prioritized and published	2018
Public Participation	Household haz. waste/used oil collection	Board of Health, Conservation Commission, Public Works Dept.	Hold household hazardous waste collection day per year	2018
Public Participation	Public Hearing / Meetings Posted	Town Manager, Board of Selectmen, Planning Board, Zoning Board of Appeals, Cc	Information on public meetings posted in accordance with MGL Section 23B	2018

Public Participation	Neponset River Watershed Association Membership	Engineering, Neponset River Watershed Association	Attend several meetings per year and collaborate with other towns on MS4 matters	2018
Public Participation	Harris Pond Citizen Committee (Pinewood Lake Association)	Conservation Commission	Form committee to increase awareness and support to restore Harris Pond	2018
Public Participation	Ames Pond Citizens Committee	Conservation Commission	Form committee to increase awareness and support to restore Ames Long Pond	2018

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
SSO inventory	Develop SSO inventory in accordance of permit conditions	DPW Operations	Complete within 1 year of effective date of permit	2018
Storm sewer system map	Create map and update during IDDE program completion	Engineering	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018
Written IDDE program	Create written IDDE program	Engineering	Complete within 1 year of the effective date of permit and update as required	2018
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Engineering	Complete 10 years after effective date of permit	2018
Employee training	Train employees on IDDE implementation	DPW Operations	Train annually	2018
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	DPW Operations, Engineering	Complete 3 years after effective date of permit	2018
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Engineering	Complete 10 years after effective date of permit	2018
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Engineering	Complete ongoing outfall screening upon completion of IDDE program	2018
IDDE Ordinance/Bylaw	Make updated revisions to IDDE Bylaw language	Engineering	Continue to implement and enforce IDDE bylaw, and make revisions as necessary.	2018

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Stormwater Committee, Engineering Dept., Conservation Commission	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Engineering Dept, Planning Board, Conservation Commission	Complete within 1 year of the effective date of permit	2018
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Engineering Dept, Conservation Commission	Complete within 1 year of the effective date of permit	2018
Waste Control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Engineering Dept, Planning Board, Conservation Commission, Board of Health	Complete within 1 year of the effective date of permit	2018
Construction Ordinance/Bylaw	Make updated revisions to ESC Bylaw language	Engineering Dept, Planning Board, Conservation Commission	Continue to implement and enforce construction ordinance and make revisions as necessary.	2018

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Engineering, Planning Board, Conservation Commission	Require submission of as-built plans for completed projects	2018
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Engineering, Planning Board, Conservation Commission	Complete 4 years after effective date of permit and report annually on retrofitted properties	2018
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Engineering, Planning Board, Conservation Commission	Complete 4 years after effective date of permit and implement recommendations of report	2018
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	Engineering, Planning Board, Conservation Commission	Complete 4 years after effective date of permit and implement recommendations of report	2018

Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook	Adoption, amendment, or modification of a regulatory mechanism to meet permit requirements	Engineering, Planning Board, Conservation Commission	Complete 2 years after effective date of permit	2018
Monitoring	Monitor construction impacts on amount of impervious surfaces	Engineering, Planning Board, Conservation Commission	Record pre/post-construction changes to amount of impervious surface	2018
Post-Construction Ordinance/Bylaw	Make updated revisions to Post-Construction Management Bylaw language	Engineering, Planning Board, Conservation Commission	Update Bylaw within 2 years of effective permit date	2018

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Implementation**
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	DPW Operations, Engineering	Completed	
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	DPW Operations, Engineering	Complete 2 years after effective date of permit and implement annually	2018
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	DPW Construction, Engineering	Completed	
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	DPW Operations, Conservation Committee	Complete and implement 2 years after effective date of permit	2018
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	DPW Operations	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018
Street sweeping program	Sweep all streets and permitee-owned parking lots in accordance with permit conditions	DPW Operations	Sweep all streets and permitee-owned parking lots once per year in the spring	2018
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	DPW Operations	Implement salt use optimization during deicing season	2018

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	DPW Operations	Inspect and maintain treatment structures at least annually	2018
O&M Program (General)	Coordinate annual meetings with Norfolk County Mosquito Control to discuss stormwater impacts from mosquito control applications and minimizing standing water in catch basins	DPW Operations, Board of Health, Conservation Commission	Annual meetings	2018
O&M Program (General)	Coordinate meetings with District 5 DOT to discuss stormwater objectives within Town	Engineering, DPW Operations	Annual meetings	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Total Maximum Daily Load (TMDL) Requirements

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Applicable TMDL	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Taunton River Watershed (Bacteria/Pathogen)	Adhere to requirements in part A.III of Appendix F	DPW Operations
Neponset River Addendum (Bacteria/Pathogen)	Adhere to requirements in part A.III of Appendix F	DPW Operations
Neponset River (Bacteria/Pathogen)	Adhere to requirements in part A.III of Appendix F	DPW Operations

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
E. Coli	Unnamed Tributary (MA73-32)	Adhere to requirements in part III of Appendix H	Engineering
Phosphorus	Unnamed Tributary (MA73-32)	Adhere to requirements in part II of Appendix H	Engineering
Turbidity	Ames Long Pond (MA62001), Bolivar Pond (MA73005)	Adhere to requirements in part V of Appendix H	Engineering
Nitrogen	All discharges in the Taunton River Watershed	Adhere to requirements in part I of Appendix H	Engineering

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary. Also, provide any additional information about your MS4 program below.

Attachments:
Figure - MS4 Outfalls
USFWS Correspondence

The outfalls included in Part II: Summary of Receiving Waters were selected based on a 100 foot distance from any waters of the U.S. Coordinates listed under unnamed water segments are based on the NAD 1983 StatePlane Massachusetts FIPS 2001 (US Feet) Coordinate System, and are listed as latitude/longitude in decimal degrees.

Regarding the ESA section 7 consultation, I agree that the MS4 Permit will not adversely affect the Northern Long-eared Bat.

Under 36 CFR 800, this facility is an existing facility authorized by the previous Permit, and is not undertaking any activity involving subsurface land disturbance less than 1 acre. This MS4 Permit will have "no potential to cause effects", in accordance with 36 CFR 800.3 (a)(1).

Part V: 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 gather and evaluate 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, I certify that 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.

Name: Title:

Signature: Date:

[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

Note: When prompted during signing, save the document under a new file name

APPENDIX C

Permit Schedule

MS4 Permit
Draft Schedule
Town of Stoughton, Massachusetts

July 2018 – MS4 Permit effective date to coincide with start of FY19

- **September 29, 2018** – Submit Updated NOI (within 90 days)

July 2019 – Items due within 1 year of effective date

- Submit Updated Stormwater Management Plan
- Written IDDE Plan, identify catchments contributing to areas with High Priority
- Additional Mapping – update stormwater system GIS (as needed)
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- Develop O&M for facilities
- Inventory Facilities
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education/Outreach (*x3 for Impaired Water Requirements*)
    - Bacteria TMDL: Targeting Dog Waste / Septic Systems for– Beaver Meadow Brook
    - Nitrogen: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Taunton River Watershed
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Beaver Meadow Brook, Unnamed Tributary MA73-32
- Property Management for Nitrogen – fertilizer use, leaf litter, street sweeping (2x per year)*
- Property Management for Phosphorus – grass cuttings, leaf litter, street sweeping (2x per year)**
- Public Participation
- Annual Training

July 2020 – Items due within 2 years of effective date

- SWPPP for Appropriate Facilities
- SPCC Plan where appropriate
- Parks Maintenance Plan
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- Updated Ordinance for Nitrogen*
- Updated Ordinance for Phosphorus**
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x3 for Impaired Water Requirements*)
    - Bacteria TMDL: Targeting Dog Waste / Septic Systems for– Beaver Meadow Brook
    - Nitrogen: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Taunton River Watershed

    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Beaver Meadow Brook, Unnamed Tributary MA73-32
- Public Participation
- Annual Training

July 2021 – Items due within 3 years of effective date

- Revisions to Stormwater Bylaw - Construction Site Stormwater Runoff Control
- Draft regulations to promote green infrastructure – Post-Construction Management
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x3 for Impaired Water Requirements*)
    - Bacteria TMDL: Targeting Dog Waste / Septic Systems for– Beaver Meadow Brook
    - Nitrogen: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Taunton River Watershed
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Beaver Meadow Brook, Unnamed Tributary MA73-32
- Public Participation
- Annual Training

July 2022 – Items due within 4 years of effective date

- Revisions to Stormwater Bylaw - Construction Site Stormwater Runoff Control
- Draft regulations to reduce impervious cover – Post-Construction Management
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- Nitrogen Source Identification Report*Phosphorous Source Identification Report*
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x3 for Impaired Water Requirements*)
    - Bacteria TMDL: Targeting Dog Waste / Septic Systems for– Beaver Meadow Brook
    - Nitrogen: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Taunton River Watershed
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Beaver Meadow Brook, Unnamed Tributary MA73-32
- Public Participation
- Annual Training

July 2023 – Permit Length (5 years)

- Inventory/Priority Ranking of LID retrofits on Town-Owned Property – Post-Construction Management
- System development for tracking Impervious Area – Post-Construction Management
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- Evaluate all Properties for BMPs – Nitrogen removal* and Phosphorous Removal

- Plan and Scheduled for BMPs - Nitrogen removal* and Phosphorous Removal
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x3 for Impaired Water Requirements*)
    - Bacteria TMDL: Targeting Dog Waste / Septic Systems for– Beaver Meadow Brook
    - Nitrogen: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Taunton River Watershed
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Beaver Meadow Brook, Unnamed Tributary MA73-32
- Public Participation
- Annual Training

**Additional requirements for Water Quality Assessment are required due to documented nitrogen impairments in the Taunton River Watershed. (see Appendix H, section I.)*

***Additional requirements for Water Quality Assessment are required due to documented phosphorus impairments in Beaver Meadow Brook, and Unnamed Tributary MA73-32. (see Appendix H, section II.)*

APPENDIX D

Endangered Species and Critical Habitats Protection Documents

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

January 8, 2018

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm (accessed January 2018)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact David Simmons of this office at 603-227-6425 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-2425
Event Code: 05E1NE00-2018-E-05633
Project Name: Stoughton MS4

July 18, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2425

Event Code: 05E1NE00-2018-E-05633

Project Name: Stoughton MS4

Project Type: ** OTHER **

Project Description: Stoughton Stormwater

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.118409409500146N71.10159863597366W

Counties: Bristol, MA | Norfolk, MA | Plymouth, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX E

MA MS4 General Permit – Appendix D – Historic Properties Documents

Appendix D
National Historic Preservation Act Guidance

Background

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects of Federal "undertakings" on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. The term federal "undertaking" is defined in the NHPA regulations to include a project, activity, or program of a federal agency including those carried out by or on behalf of a federal agency, those carried out with federal financial assistance, and those requiring a federal permit, license or approval. See 36 CFR 800.16(y). Historic properties are defined in the NHPA regulations to include prehistoric or historic districts, sites, buildings, structures, or objects that are included in, or are eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and remains that are related to and located within such properties. See 36 CFR 800.16(1).

EPA's issuance of a National Pollutant Discharge Elimination System (NPDES) General Permit is a federal undertaking within the meaning of the NHPA regulations and EPA has determined that the activities to be carried out under the general permit require review and consideration, in order to be in compliance with the federal historic preservation laws and regulations. Although individual submissions for authorization under the general permit do not constitute separate federal undertakings, the screening processes provides an appropriate site-specific means of addressing historic property issues in connection with EPA's issuance of the permit. To address any issues relating to historic properties in connection with the issuance of this permit, EPA has included a screening process for applicants to identify whether properties listed or eligible for listing on the National Register of Historic Places are within the path of their discharges or discharge-related activities (including treatment systems or any BMPs relating to the discharge or treatment process) covered by this permit.

Applicants seeking authorization under this general permit must comply with applicable, State, Tribal, and local laws concerning the protection of historic properties and places and may be required to coordinate with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO) and others regarding effects of their discharges on historic properties.

Activities with No Potential to Have an Effect on Historic Properties

A determination that a federal undertaking has no potential to have an effect on historic properties fulfills an agency's obligations under NHPA. EPA has reason to believe that the vast majority of activities authorized under this general permit will have no potential effects on historic properties. This permit typically authorizes discharges from existing facilities and requires control of the pollutants discharged from the facility. EPA does not anticipate effects on historic properties from the pollutants in the authorized discharges. Thus, to the extent EPA's issuance of this general permit authorizes discharges of such constituents, confined to existing channels, outfalls or natural drainage areas, the permitting action does not have the potential to cause effects on historical properties.

In addition, the overwhelming majority of sources covered under this permit will be facilities that are seeking renewal of previous permit authorization. These existing dischargers should have already addressed NHPA issues in the previous general permit as they were required to certify that they were either not affecting historic properties or they had obtained written agreement from

the applicable SHPO or THPO regarding methods of mitigating potential impacts. To the extent this permit authorizes renewal of prior coverage without relevant changes in operations the discharge has no potential to have an effect on historic properties.

Activities with Potential to Have an Effect on Historic Properties

EPA believes this permit may have some potential to have an effect on historic properties the applicant undertakes the construction and/or installation of control measures that involve subsurface disturbance that involves less than 1 acre of land. (Ground disturbances of 1 acre or more require coverage under the Construction General Permit.) Where there is disturbance of land through the construction and/or installation of control measures, there is a possibility that artifacts, records, or remains associated with historic properties could be impacted. Therefore, if the applicant is establishing new or altering existing control measures to manage their discharge that will involve subsurface ground disturbance of less than 1 acre, they will need to ensure (1) that historic properties will not be impacted by their activities or (2) that they are in compliance with a written agreement with the SHPO, THPO, or other tribal representative that outlines all measures the applicant will carry out to mitigate or prevent any adverse effects on historic properties.

Examples of Control Measures Which Involve Subsurface Disturbance

The type of control measures that are presumptively expected to cause subsurface ground disturbance include:

- Dikes
- Berms
- Catch basins, drainage inlets
- Ponds, bioretention areas
- Ditches, trenches, channels, swales
- Culverts, pipes
- Land manipulation; contouring, sloping, and grading
- Perimeter Drains
- Installation of manufactured treatment devices

EPA cautions applicants that this list is non-inclusive. Other control measures that involve earth disturbing activities that are not on this list must also be examined for the potential to affect historic properties.

Certification

Upon completion of this screening process the applicant shall certify eligibility for this permit using one of the following criteria on their Notice of Intent for permit coverage:

> **Criterion A**: The discharges do not have the potential to cause effects on historic properties.

Criterion B: A historic survey was conducted. The survey concluded that no historic properties are present. Discharges do not have the potential to cause effects on historic properties.

Criterion C: The discharges and discharge related activities have the potential to have an effect on historic properties, and the applicant has obtained and is in compliance with a written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the applicant will carry out to mitigate or prevent any adverse effects on historic properties.

Authorization under the general permit is available only if the applicant certifies and documents permit eligibility using one of the eligibility criteria listed above. Small MS4s that cannot meet any of the eligibility criteria in above must apply for an individual permit.

Screening Process

Applicants or their consultant need to answer the questions and follow the appropriate procedures below to assist EPA in compliance with 36 CFR 800.

Question 1: Is the facility an existing facility authorized by the previous permit or a new facility and the applicant is not undertaking any activity involving subsurface land disturbance less than an acre?

YES - The applicant should certify that fact in writing and file the statement with the EPA. This certification must be maintained as part of the records associated with the permit.
The applicant should certify eligibility for this permit using Criterion A on their Notice of Intent for permit coverage. The applicant does not need to contact the state Historic Commission. Based on that statement, EPA will document that the project has "no potential to cause effects" (36 CFR 800.3(a)(1)). There are no further obligations under the Section 106 regulations.

NO- Go to Question 2.

Question 2: Is the property listed in the National Register of Historic Places or have prior surveys or disturbances revealed the existence of a historic property or artifacts?

NO - The applicant should certify that fact in writing and file the statement with the EPA. This certification must be maintained as part of the records associated with the permit.
The applicant should certify eligibility for this permit using Criterion B on their Notice of Intent for permit coverage. The applicant does not need to contact the state Historic Commission. Based on that statement, EPA will document that the project has "no potential to cause effects" (36 CFR 800.3(a)(1)). There are no further obligations under the Section 106 regulations.

YES - The applicant or their consultant should prepare a complete information submittal to the SHPO. The submittal consists of:

- Completed Project Notification Form- forms available at http://www.sec.state.ma.us/mhc/mhcform/formidx.htm;

- USGS map section with the actual project boundaries clearly indicated; and
- Scaled project plans showing existing and proposed conditions.

(1) Please note that the SHPO does not accept email for review. Please mail a paper copy of your submittal (Certified Mail, Return Receipt Requested) or deliver a paper copy of your submittal (and obtain a receipt) to:

State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Blvd.
Boston MA 02125.

(2) Provide a copy of your submittal and the proof of MHC delivery showing the date MHC received your submittal to:

NPDES Permit Branch Chief
US EPA Region 1 (OEP06-1)
5 Post Office Square, Suite 100
Boston MA 02109-3912.

The SHPO will comment within thirty (30) days of receipt of complete submittals, and may ask for additional information. Consultation, as appropriate, will include EPA, the SHPO and other consulting parties (which includes the applicant). The steps in the federal regulations (36 CFR 800.2 to 800.6, etc.) will proceed as necessary to conclude the Section 106 review for the undertaking. **The applicant should certify eligibility for this permit using Criterion C on their Notice of Intent for permit coverage.**

APPENDIX F

New or Increased Discharges

New or Increased Discharges

Stoughton, MA

Location	Description	Proposed Use	Area	Contributing Area to MS4	BMP
Example St	Housing Community	Residence	27 acres	9 acres	Stormceptor unit and detention pond

**Example of what would be written for a new or increased discharge

APPENDIX G

SSO Inventory

Sanitary Sewer Overflow (SSO) Inventory

Stoughton, MA

Location	Discharge Location	Is Discharge Entering MS4? (Y/N)	Date/Time of SSO Occurance	Estimated Volume of SSO Occurance	Known/Suspected Cause	Mitigation Measures Completed	Mitigation Implementation Date	Mitigation Measures Planned	Mitigation Implementation Schedule
Example St	Enters into Woods Pond	Yes	August 4, 2016 9:00 AM - August 5, 2016 3:00 PM	1,200 gallons	Illicit resident connection	Illicit connection removed	August 8, 2016		

**Example of what would be written for a new or increased discharge

APPENDIX H

Current Stormwater Bylaw and Rules and Regulations

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;

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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.

RULES & REGULATIONS FOR STORMWATER MANAGEMENT

(Approved by Select Board on October 19, 2021)

UNDER THE GENERAL BYLAWS OF THE TOWN OF STOUGHTON, CHAPTER 159: STORMWATER MANAGEMENT BYLAW

(Stormwater Management Bylaw adopted at 2021 Annual Town Meeting)

1.0 PURPOSE

The purpose of these Regulations is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased construction SITE and POST-DEVELOPMENT stormwater RUNOFF, decreased groundwater RECHARGE, and NONPOINT SOURCE pollution associated with NEW DEVELOPMENT and REDEVELOPMENT, as more specifically addressed in the Stormwater Management Bylaw of the Town of Stoughton.

2.0 DEFINITIONS

Terms defined herein and in the Bylaw are shown in all CAPITAL LETTERS. The definitions contained herein apply to issuance of a STORMWATER PERMIT established by the Town of Stoughton Stormwater Management Bylaw and implemented through these Regulations. Terms not defined in this section, in the Bylaw, or in the Massachusetts Wetlands Regulations shall be construed according to their customary and usual meaning.

The following terms are defined in the Massachusetts Wetlands Regulations (310 CMR 10.00): Cold-water fishery, Critical areas, environmentally sensitive SITE design, Flood control, ground water, Illicit discharge, Land uses with higher potential pollutant loads, LOW IMPACT DEVELOPMENT (LID) TECHNIQUES, Maintenance of a stormwater management system, REDEVELOPMENT, STORMWATER BEST MANAGEMENT PRACTICE, Stormwater management system, Surface waters, and Vernal pool habitat.

The following terms are *in addition to* the terms defined in Chapter 159 of the Stoughton General Bylaw.

FLOODING: A local and temporary inundation or a rise in the surface of a body of water, such that it covers land not usually under water.

IMPAIRED WATERS: According to EPA, Impaired Waters are waterbodies that do not meet one or more of its designated uses(s) in the applicable surface water quality standards. These waterbodies are listed in categories 4 and 5 of the most recent Massachusetts Integrated List of Waters. See the Massachusetts Department of Environmental Protection website for the most recent Integrated List of Waters.

IMPERVIOUS SURFACE or IMPERVIOUS COVER (IC) or IMPERVIOUS AREA (IA): Any material or structure on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, but is not limited to: paved surfaces (parking lots, sidewalks, driveways), roof tops, swimming pools, patios, and paved, gravel and compacted dirt surfaced roads.

INVASIVE SPECIES: Those plant species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health. For the purpose of this bylaw, a plant species is considered “invasive" only when it occurs on the List of Federal Noxious Weeds (available on the U.S. Department of Agriculture Natural Resources Conservation Service website) or on the Massachusetts Prohibited Plant List (available on the Massachusetts Department of Agricultural Resources website).

INFILTRATION: The act of conveying surface water into the ground to permit groundwater RECHARGE and the reduction of stormwater RUNOFF from a project SITE.

MASSACHUSETTS STORMWATER HANDBOOK (HANDBOOK): The Stormwater Handbook, and as amended from time to time, that was produced by MassDEP to be used as guidance for controlling stormwater. Implementation of the STORMWATER MANAGEMENT STANDARDS shall be in accordance with the Stormwater Handbook.

NEW DEVELOPMENT: Any construction or LAND DISTURBANCE on a parcel of land that is currently in a natural vegetated state and does not contain alteration by man-made activities.

OWNER: An individual, firm, association, syndicate, partnership, or corporation having sufficient proprietary interest to seek development of land.

PERSON: Any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or political subdivision thereof to the extent subject to Town Bylaws, codes, administrative agency, public or quasi-public corporation or body, the Town of Stoughton, and any other legal entity, its legal representatives, agents, or assigns.

PRE-DEVELOPMENT: The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Engineering Department. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first plan submission shall establish pre-development conditions.

POST-DEVELOPMENT: The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific SITE or tract of land. Post-development refers to the phase of a NEW DEVELOPMENT or REDEVELOPMENT project after completion of construction, and does not refer to the construction phase of a project.

RECHARGE: The replenishment of underground water reserves.

RESOURCE AREA: Any area protected under, including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Stoughton Wetlands Protection Bylaw.

RUNOFF: Rainfall or snowmelt flowing over the ground surface.

SEDIMENTATION: A process of depositing material that has been suspended and transported in water.

SITE: The parcel of land being developed, or a designated planning area in which the land development project is located.

STOP WORK ORDER: An order issued by the Planning Board or its designee which requires that all construction activity on a site be stopped.

SUBDIVISION: Defined in the Subdivision Control Law of Massachusetts (M.G.L. – Chapter 41, Section 81L Definitions).

TOTAL MAXIMUM DAILY LOAD (TMDL): The greatest amount of a pollutant that a water body can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters for drinking, swimming, recreation, and fishing. A TMDL is implemented by specifying how much of that pollutant can come from point, nonpoint, and natural sources. See section 303(d) of the Clean Water Act and 40 CFR §130.2 and §130.7.

WATER QUALITY VOLUME (WQ_v): The storage volume needed to capture a specified average annual stormwater RUNOFF volume. Numerically (WQv) will vary as a function of drainage area or IMPERVIOUS AREA.

3.0 AUTHORITY

A) The Rules and Regulations contained herein have been adopted by the Select Board in accordance with the Town of Stoughton Stormwater Management Bylaw.

B) Nothing in these Rules and Regulations is intended to replace or be in derogation of the requirements of the Town of Stoughton Zoning Bylaw, Subdivision Rules and Regulations, Wetlands Protection Bylaw, Board of Health Bylaws, or any Rules and Regulations adopted there under.

C) These Stormwater Regulations may be periodically amended by the Select Board in accordance with the procedures outlined in Section 159.5 (B) of the Town of Stoughton Stormwater Management Bylaw.

4.0 ADMINISTRATION

The Select Board is designated as the STORMWATER AUTHORITY under the Stormwater Management Bylaw. The Board shall administer, implement and enforce these Regulations. The Board may designate the Town Engineer or an outside consultant as its designee for the purposes of reviewing all stormwater submittals and conducting inspections described in Section 10.0.

5.0 APPLICABILITY

A) These Stormwater Management Regulations apply to all activities in accordance with the Scope and Applicability of Section 159.4 of the Stormwater Management Bylaw as described in this section. No Town Earth Removal Permit, Order of Conditions from the Conservation Commission, Site Plan approval from the Planning Board, Building Permit, Subdivision approval, Special Permit, variance or finding shall constitute compliance with this bylaw, unless issuance of such permit included review by the Engineering Department or Town Consultants on behalf of the Board of Selectmen relative to the Stormwater Management Bylaw.

Projects and/or activities not specifically under the currently regulated jurisdiction of any of the Town of Stoughton boards, commissions or departments but still within the jurisdiction of the Town of Stoughton Stormwater Management Bylaw must obtain a STORMWATER PERMIT from the Engineering Department in accordance with the permit procedures and requirements defined in Section 6.0 of these Regulations. Projects not requiring regulatory approval from other boards, departments, or commissions will undergo administrative review through the Town of Stoughton Engineering Department.

B) If a portion of a project or activity meets the Scope and Applicability of Section 159.4 of the Stormwater Management Bylaw and it is within the specific jurisdiction of another Town board, then the Select Board will remain the STORMWATER AUTHORITY, responsible for facilitating stormwater review and approval of the STORMWATER PERMIT. The specific application submission requirements, public notices, and fee requirements of the applicable board, commission, and/or department shall remain in effect in addition to the requirements of the Stormwater Management Bylaw. To the extent possible, the Select Board and other Town boards shall coordinate any necessary expert engineering and other consultant services. No SITE ALTERING activity may commence without a STORMWATER PERMIT issued by the Select Board (issued by the Stoughton Engineering Department).

6.0 PERMIT PROCEDURES AND REQUIREMENTS

A) Projects requiring a STORMWATER PERMIT per Section 159.4 of the Stormwater Management Bylaw shall be required to submit the materials as specified in this Section, and are required to meet the Performance Standards: Stormwater and LID Criteria as specified in Section 7.0 of these Regulations.

B) Filing Application

1. The applicant shall file with the approving Board, Commission, and Engineering Department, ten (10) copies and one (1) digital copy in Portable Document Format (PDF) of a completed application package for a STORMWATER PERMIT. While the applicant can be a representative, the permittee must be the OWNER of the SITE or holder of an easement. The Stormwater Management application package shall include:

    a) A completed Application Form with original signatures of all OWNERS;
    b) Stormwater Report to document compliance with the STORMWATER MANAGEMENT STANDARDS and all additional requirements specifically described in these Regulations;
    c) Payment of the application fee; and
    d) Draft Operation & Maintenance Agreement.
    e) Draft Stormwater Pollution Prevention Plan (SWPPP).

C) Filing Fees

1. General. A non-refundable application fee shall be due and payable to the Town of Stoughton at the time an application is filed. The application fee will be used for processing of the application, coordination of Town staff, posting hearings, inspections by Town staff and other expenses connected with the review of the application by Town staff.

2. Rules

    a) Stormwater Permit Application and Review Fees are non-refundable. All fees shall be calculated by the Engineering Department in accordance with the fee schedule in Table 1 below.
    b) These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local Bylaw.
    c) Federal, State, and Municipal projects shall be exempt from Application Fees associated with a STORMWATER PERMIT.
    d) The fee includes two follow-up reviews for plan and document revisions.
    e) The fees denoted below shall not be used to calculate review fees for outside consultants. Additional review fees may be charged to cover outside professional consultant review services for a project if the Town Engineer determines that such services are necessary due to the scope and complexity of the project.
    a) Filing Fees will be deposited into the Stormwater Revolving Fund.

Table 1: Filing Fee Schedule for Stormwater Permits

Application Type	Fee
Disturbance area is 1.0 to 2.0 acres	$1,000
Disturbance area is 2.0 to 5 acres	$1,500
Disturbance area is 5.0 to 10.0 acres	$2,000
Disturbance area of 10.0 acres or more	$2,500

3. Revision of Fee Schedules and Regulations Governing Fees

   a) The Select Board may review and revise its Regulations and fee schedules periodically at its discretion.

   b) Amendments to these Regulations shall be preceded by a posted public hearing of the Select Board not less than 15 days prior to the date upon which the change is to be effective.

   c) A copy of the written decision of revised Regulations and/or fee schedules will be filed with the Town Clerk within 12 business days after final action by the Board is taken.

4. Revolving Fund for consultant Services. The Select Board may, at its discretion, require deposit of funds into a revolving fund in accordance with Chapter 44 Section 53E ½ to pay for peer review of projects. Generally, such projects are more complicated and require extensive review; however, the Board may also consider such peer review upon the recommendation of the Town Engineer. The Select Board will strive to make such reviews concurrent with other permits being sought by the applicant, and not duplicate efforts of peer reviewers.

D) Public Hearings and Meetings

1. For projects or activities within the currently regulated jurisdiction of Town Boards and Commissions (including but not limited to projects requiring Site Plan Review through the Planning Board, Subdivision, Special Permit, or an Order of Conditions through the Conservation Commission), the Engineering Department shall review the STORMWATER PERMIT concurrently with other permits in order to streamline the review process for the applicant.

2. For projects that are not otherwise subject to review by Town Boards and Commissions, a STORMWATER PERMIT application shall be reviewed administratively by the Engineering Department within thirty (30) days of the receipt of a complete application. The Engineering Department may continue its consideration of the application to a further date, in order to receive additional information as deemed necessary. Failure of the Engineering Department to take final action within thirty (30) days shall not result in constructive approval of the application. The BOARD shall be notified of all STORMWATER PERMIT applications that have been received.

E) Plan Changes

The permittee must notify the Engineering Department or its designee in writing of any drainage change or alteration in the system authorized in a STORMWATER PERMIT before any change or alteration is made. If the Engineering Department or its designee determines in writing that the change or alteration is significant, based on the STORMWATER MANAGEMENT STANDARDS, Performance Standards in Section 7.0, and accepted construction practices, the Engineering Department may require that an amended application be filed. A change will be required when 25% of the land area of the previously approved project plans are revised, OR, any changes are made to the stormwater system including any stormwater BMPs.

F) Entry

To the extent permitted by state law, or if authorized by the OWNER or other party in control of the property, Board or its designee, officers, and employees may enter upon privately owned property for the purpose of performing their duties under the Stormwater Management Bylaw and these Regulations 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.

G) Project Completion

At completion of construction of the project, the permittee shall submit as-built record drawings of all structural best management practices required in the STORMWATER PERMIT and an updated Maintenance Agreement noting any changes and new responsible parties. As-built Plans shall be full size plans at a scale approved by the Planning Board that reflect the "as built" conditions, including all final grades, as determined by a Registered Land Surveyor. Topographic information shall be collected for all of the surface stormwater management features including contours of stormwater basins, top of berm elevations, outlet control elevations, etc. All changes to project design shall be bubbled on plans to define changes made or otherwise noted as changes. All work deleted, corrections in elevations, and changes in materials, shall be shown on the as-built drawings. Deviations from the approved plans, if any, shall be certified in writing by a Registered Professional Engineer. As-built plans shall be submitted within two years of the completion of construction projects. The as-built drawings must depict all on site controls, both structural and non-structural, designed to manage stormwater generated by the site. The applicant shall also submit as-built drainage calculations using the information collected by the as-built drawings to insure that the proposed stormwater BMP's have been constructed consistent with the approved design.

Surveyed latitude and longitude position of all structural STORMWATER BEST MANAGEMENT PRACTICES, including drainage structures, conveyances, outfalls, catch basins, curbing and headwalls compatible with Stoughton's Geographic Information System (GIS) shall be submitted digitally to the Engineering Department. Record drawings shall also include a calculation of IMPERVIOUS AREA (IA) and DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) in square feet (ft^2) for pre-

and post-development conditions. Additional requirements for as- built plans are in the Stoughton Subdivision Rules and Regulations.

H) Permit Expiration

If work has not been completed within three (3) years, the Applicant shall notify the Engineering Department. The Board may re-evaluate the originally approved STORMWATER PERMIT to determine whether the plan still satisfies local program requirements. Permits may be extended by the Engineering Department. If the Engineering Department finds the previously filed Plan to be inadequate, a modified plan shall be submitted and approved prior to the commencement or continuation of land- disturbing activities per the procedure in Section 6.0 of these Regulations.

I) Stormwater Report Contents

1. The application for a STORMWATER PERMIT shall include the submittal of a Stormwater Report to the Applicable Board, Commission, or Engineering Department prepared in accordance with the MASSACHUSETTS STORMWATER HANDBOOK and the criteria established in these Regulations. This Stormwater Report shall document compliance with each of the STORMWATER MANAGEMENT STANDARDS as provided in the HANDBOOK as well as the performance standards as described in Section 7.0 and shall contain sufficient information for the Engineering Department to evaluate the environmental impact, effectiveness, and acceptability of the SITE planning process and the measures proposed by the applicant for reducing adverse impacts from stormwater RUNOFF. The Stormwater Report shall remain on file with the Engineering Department.

2. The Stormwater Report shall fully describe the project in drawings, narrative, and calculations. To demonstrate compliance with these Regulations to the Engineering Department, the applicant shall include the following in addition to the Stormwater Report requirements in the HANDBOOK:

   a) Locus Map;
   b) Existing Conditions SITE Plan. Stamped by a Registered Land Surveyor including existing topography, wetlands resources (if any), special flood zones or 100-year flood plain, topography at 1-foot contours, site detail, utilities;
   c) The existing zoning, and land use at the SITE and abutting properties;
   d) A proposed condition SITE Plan including the layout of the project, proposed buildings, parking areas, sidewalks, driveways, etc.;
   e) Description of proposed Low Impact Development and green infrastructure best management practices
   f) The location(s) of existing and proposed easements;
   g) The location of existing and proposed utilities;
   h) The SITE's existing & proposed topography with contours at 1-foot intervals;
   i) The existing SITE stormwater flow patterns including surface flows and any existing subsurface conveyance or RECHARGE facilities);
   j) Information regarding whether the site is located in a watershed that drains

to an impaired water.

k) A written description and delineation of existing stormwater conveyances, impoundments, wetlands, drinking water protection areas, swimming beaches, and other protected RESOURCE AREAs, on or adjacent to the SITE or into which stormwater flows;
l) A delineation of 100-year flood plains, if applicable;
m) The existing and proposed vegetation and ground surfaces with RUNOFF coefficients for each; (including all IMPERVIOUS COVER – parking, driveways, etc.)
n) A drainage area map showing pre- and post-construction watershed boundaries (as governed by topography, not the property line), drainage areas, time of concentration (tc) path, and stormwater flow paths, including MUNICIPAL STORM DRAIN SYSTEM flows;
o) A description and drawings of all components of the proposed Stormwater Management system including:
    i. All measures for the collection, detention, retention, treatment or INFILTRATION of water;
    ii. Description of non-structural BMPs;
    iii. All measures for the protection of water quality;
    iv. The structural details for all components of the proposed drainage systems and Stormwater Management facilities;
    v. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
    vi. Proposed SITE plan including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
    vii. Any other information requested by the Board.
p) Hydrologic and hydraulic design calculations for the PRE-DEVELOPMENT and POST-DEVELOPMENT conditions for the design storms specified in the MASSACHUSETTS STORMWATER HANDBOOK. Such calculations shall include:
    i. Description of the design storm frequency, intensity and duration as required by the most current version of the MASSACHUSETTS STORMWATER HANDBOOK;
    ii. Time of concentration;
    iii. Soil Runoff Curve Number (RCN) based on land use and soil hydrologic group;
    iv. Peak RUNOFF rates and total RUNOFF volumes for each watershed area;
    v. Provisions for protecting, during construction, the INFILTRATION capacity of the soil where INFILTRATION is proposed;
    vi. Culvert capacities;
    vii. Flow velocities;
    viii. Data on the change in stormwater rates and volume of RUNOFF for the specified design storms,
    ix. Documentation of sources for all computation methods and field test results.
    x. Sizing calculations for all stormwater Best Management Practices indicating required and proposed BMP sizing.
    xi. Soil test pits at locations consistent with the requirements of the

Standards. All test pits should include estimated seasonal high groundwater elevations as determined using soil mottles, Frimpter, or another suitable method, as well as soil INFILTRATION rates Stormwater Management checklist as described in the Standards

q) Landscaping Plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.

r) An Erosion and Sedimentation Control Plan consistent with the requirements of the Massachusetts Standards including the following:
   i. Minimizing land disturbance
   ii. Site perimeter controls
   iii. Slope stabilization
   iv. Stabilized construction site entrances and exits to prevent off-site tracking of sediment
   v. Storm drain inlet protection
   vi. Temporary sedimentation basins
   vii. Locations of proposed waste control including discarded building materials, concrete truck wash out areas, chemicals, litter, and sanitary wastes. These areas are prohibited from discharging to the MS4.
   viii. Appropriate erosion and sedimentation control notes including notes that require that no land clearing is to be undertaken prior to installation of erosion and sedimentation control measures
   ix. Operations plan for the construction site
   x. Planned temporary Best Management Practices
   xi. Site stabilization following construction
   xii. Inspection of stormwater controls at regular intervals

3. If, in the applicant's opinion, one or more of the Stormwater Management Standards or other requirements cannot be reasonably met, the applicant shall provide a detailed explanation in the Stormwater Report. This narrative shall include reasons that the requirement or Standard could not be met and a description of potential consequences if no mitigating measures are provided.

J) Operations & Maintenance Agreement

The Maintenance Agreement shall include the signature(s) of the OWNER(s) and the party or parties responsible for operation and maintenance as specified in the STORMWATER PERMIT and party or parties responsible for perpetual inspections as specified under Section 12.B of these Regulations. The Maintenance Agreement shall include a map showing the "as-built" location of the systems and facilities including all structural and nonstructural stormwater best management practices (BMPs), low impact design best management practices, catch basins, manholes/access lids, pipes, and other stormwater devices. The Maintenance Agreement and plan showing such systems and facilities to be privately maintained, including associated easements shall be recorded, by the OWNER with the Norfolk County Registry of Deeds as conditioned in the STORMWATER PERMIT. Evidence of recording shall be presented to the Engineering Department prior to the issuance of the Town's final approval. The Operations & Maintenance agreement will require the annual submission of all

Operations and Maintenance Reports to the Town of Stoughton Engineering Department.

7.0 PERFORMANCE STANDARDS: STORMWATER AND LID CRITERIA

A) For compliance with Performance Standards of these Regulations, the applicant must meet all standards of the Massachusetts Department of Environmental Protection's STORMWATER MANAGEMENT STANDARDS and HANDBOOK using current Best Management Practices (BMPs) as well as the additional design criteria specified below.

B) Additional Design Criteria

1. Low Impact Design (LID) site planning and stormwater design strategies must be used to the maximum extent practicable. Specific strategies and BMPs to be considered include - but are not limited to – reducing or minimizing impervious surfaces, incorporating stormwater management facilities into landscape islands, bioretention basins, grass and surface swales, infiltrative basins and chambers, pervious pavers, etc. A decentralized approach to stormwater management, including installing different BMP's throughout the site, should be included. Traditional collect and convey systems should be minimized. In the event that LID site design strategies and BMPs are not proposed, the applicant should provide a narrative describing why these facilities cannot be incorporated into the site design.

2. Landscape Design

   SITE plans and landscape plans for all proposed projects must take appropriate steps to minimize water use for irrigation and to allow for natural RECHARGE of groundwater. Native species and habitat-creating species shall be used in all landscape plans to the maximum extent possible as SITE conditions allow. INVASIVE SPECIES shall not be planted in the Town of Stoughton under any circumstances.

   Low Impact Development surface BMP's should include a landscape plan that includes appropriate plantings. It is the intent of these Regulations that surface stormwater BMP's be incorporated into the landscape to the maximum extent practicable and not simply be shallow grassed depressions used to collect, infiltrate and/or store water.

3. Hydrologic Basis for Design

   For stormwater facility sizing criteria, refer to DEP Stormwater Management Regulations & Handbook and engineering practices. In addition to the requirements described in the DEP Stormwater Management Regulations & Handbook, the following performance standards apply to NEW developments:

   a) Retain the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area on the site;

b) Remove 90% of the annual Total Suspended Solids (TSS) generated from the total post-construction impervious area on site AND 60% of the average annual load of Total Phosphorus(TP) generated from the total post-construction impervious area on site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool.

4. For REDEVELOPMENT Projects, the following performance standards apply:

   a) Retain the volume of runoff equivalent to, or greater than, .80 inch multiplied by the total post-construction impervious surface areas on the site;
   b) Remove 80% of the average annual post-construction load of Total Suspended Solids (TSS) generated from the total post-construction impervious area on the site and 50% of the annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool.
   c) Redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems where feasible) are exempt from section 4a-c above. Roadway widening or improvements that increase the amount of impervious area on a redevelopment site are required to comply with the requirements described above.

5. Sensitive Areas – Additional Design Criteria

   Stormwater discharges to Critical Areas with sensitive resources as defined in the Massachusetts STORMWATER MANAGEMENT STANDARD No. 6 are subject to additional criteria, and may need to utilize or restrict certain STORMWATER MANAGEMENT practices at the discretion of the Board. The Board has also designated the following Sensitive Areas with specific design criteria. The Board may designate additional Sensitive Areas and specific criteria for these areas by amending these Regulations.

   1. Discharges to Water Quality Impaired Waters
      The applicant must determine whether stormwater discharges from the proposed SITE will contribute, either directly or indirectly, to an IMPAIRED WATER body. Structural and non-structural BMPs shall be selected that will control the discharge of the pollutants of concern and ensure that the discharges will not cause an instream exceedance of applicable water quality standards. Pollutants of concern refer to the pollutant identified as causing the impairment. For more information on impaired waters and the most recent Integrated List of Impaired Waterbodies, see MassDEP's TMDL website.
      a) Ames Long Pond – Turbidity
      b) Bolivar Pond – Turbidity
      c) Unnamed Tributary (MA73-32) – E.coli & Phosphorus
      d) Taunton River Watershed – Nitrogen
      e) Beaver Meadow Brook (MA73-20) – E.coli
      f) Steep Hill Brook (MA73-18)
   2. Projects that are located within a Sensitive Area or watershed that contributes

to a water body that is impaired for phosphorus shall include structural BMPs that are optimized for phosphorus removal. The applicant shall document the estimated phosphorus removal.

3. Projects that are located within a Sensitive Area or watershed that contributes to a water body that is impaired for nitrogen shall include structural BMPs that are optimized for nitrogen removal. The applicant shall document the estimated nitrogen removal.

8.0 WAIVERS

A) The Board may in its discretion and after due considerations decide to waive and exempt strict compliance with any requirement of the Stormwater Management Bylaw and these Regulations, where it makes a written finding that such action is:

1. Allowed by federal, state and local statutes and/or regulations;
2. In the public interest; and
3. Consistent with the purpose and intent of the Town of Stoughton Stormwater Management Bylaw and these Regulations.

B) An 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 the Bylaw.

C) Waivers described herein shall not constitute an exemption from any applicable Federal or State permitting requirements.

9.0 CONSTRUCTION INSPECTIONS

A) NOTICE OF CONSTRUCTION COMMENCEMENT

The applicant must notify the Engineering Department or its designee not less than 14 days prior to the commencement of construction and schedule a pre-construction meeting. In addition, the applicant must notify the Engineering Department or its designee 48 hours in advance of construction of critical components of any stormwater management facility. At this time, the applicant should produce a copy of the final Stormwater Pollution Prevention Plan as well as evidence that the project has a filed a Notice of Intent with the United States Environmental Protection Agency under the National Pollutant Discharge Elimination System Construction General Permit.

B) At the discretion of the Engineering Department, periodic inspections of the stormwater management system construction shall be conducted by qualified personnel (a Town Officer, a professional engineer, or their designee who has been approved by the Engineering Department). All inspections shall be documented and written reports prepared that contain the following information:

1. The date and location of the inspection as well as weather conditions;
2. Names, titles, and qualifications of personnel making the inspection;
3. Whether construction is in compliance with the approved STORMWATER PERMIT;
4. Variations from the approved construction specifications; and
5. Any other variations or violations of the conditions of the approved STORMWATER PERMIT.

C) EROSION CONTROL INSPECTION

1. If a project is covered by the EPA NPDES General Permit for Stormwater Discharges from Construction Activities (Construction General Permit), the permittee is required to conduct inspections in accordance with requirements of the Construction General Permit, and must submit reports of all inspections required thereunder to the Engineering Department.
2. If a project is <u>not</u> covered by the Construction General Permit, to ensure EROSION CONTROL practices are in accordance with the STORMWATER PERMIT, EROSION CONTROL Inspections will be conducted by the OWNER or an authorized representative at least once every seven (7) calendar days from the start of construction until the SITE is permanently stabilized. Inspection frequency may be reduced to at least once a month if the SITE is determined by the Board or its designee to be temporarily stabilized, such as RUNOFF is unlikely due to winter conditions (e.g., SITE is covered with snow, ice, or the ground is frozen, site is covered with mulch, stone, etc.). The permittee is required to notify the Select Board or its designee of any change in inspection frequency, including termination of inspections due to SITE stabilization.

    a. The inspection form will include:
        i. Date of inspection
        ii. Name, title, qualifications, and signature of inspector;
        iii. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
        iv. Weather information and a description of any discharges occurring at the time of the inspection
        v. Location(s) of discharges of sediment or other pollutants from the SITE;
        vi. Location(s) of BMPs that need to be maintained;
        vii. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
        viii. Location(s) where additional BMPs are needed that did not exist at prior inspection; and
        ix. Corrective action required including any changes to the STORMWATER

PERMIT necessary and implementation dates.

D) INSPECTION SCHEDULE

The Engineering Department or its designee shall inspect the project SITE at the following stages, at a minimum:

1. Initial SITE Inspection: prior to approval of any plan;

2. Inspection of site following installation of erosion and sedimentation control measures and prior to any clearing. All erosion and sedimentation control practices must be installed prior to any land clearing activities.

3. Inspection of the excavation for any infiltration facilities prior to the installation of any of the facility components (i.e. stone, pipe, chambers, etc.) to insure that adequate soil conditions exist consistent with the approved plans.

4. Stormwater Management System Inspection: An inspection will be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures.

5. Final Inspection

   a) After the stormwater management system has been constructed and stabilized, all applicants are required to submit actual "as built" plans for any stormwater management facilities or practices after final construction is completed and must be certified by a Professional Engineer. As-built plans must be submitted within two years of completion of construction.
   b) The Engineering Department or its designee shall inspect the system to confirm its "as- built" features.
   c) A copy of the Construction General Permit Notice of Termination (NOT) (required by the EPA within 30 days after land disturbance has ceased and the site is stabilized; with seventy percent (70%) permanent vegetation coverage or 70% permanent erosion and sediment controls installed) shall be submitted with the As-built.
   d) An Illicit Discharge Compliance Statement shall be submitted by the permittee's Technical Representative and Registered Professional Engineer to verify that no illicit discharges exist on the site. For redevelopment projects, the Illicit Discharge Compliance Statement shall also document all actions taken to identify and remove illicit discharges, including, without limitation, visual screening, dye or smoke testing, and the removal of any sources of illicit discharges to the stormwater management system.
   e) The permittee's Technical Representative and Registered Professional Engineer shall evaluate the effectiveness of the stormwater best management practices (BMPs) during an actual storm and document the findings. The Final Report shall also include certification from the Applicant's Technical Representative as to the effectiveness of the installed system during storm

events.

E) INADEQUACY OF SYSTEM

1. If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built in accordance with the STORMWATER PERMIT, it shall be corrected by the applicant at the applicant's cost.

2. If the Engineering Department or its designee determines that there is a failure to comply with the plan, the OWNER shall be notified in writing of the nature of the violation and the required corrective actions. The Engineering Department or its designee shall issue a STOP WORK ORDER until any violations are corrected and all work previously completed has received approval by the Engineering Department or its designee.

10.0 CONTINUING INSPECTION AND MAINTENANCE REQUIREMENTS

A) Maintenance Responsibility

The Town of Stoughton will not accept ownership of stormwater BMPs located outside of street rights of way, Town easements, or Town Parcels of land. The maintenance of such facilities shall remain the permanent responsibility of the applicant or his successors and/or assigns. The OWNER of the property on which work has been done pursuant to these Regulations for private stormwater management facilities, or any other PERSON or agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and SEDIMENTATION controls, and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans. When a project is a Definitive Subdivision, it is responsibility of the developer to maintain the stormwater system until the Subdivision is accepted by the Town. In the event a homeowner's association is created to maintain the subdivision, it will be the responsibility of the homeowner's association to maintain the stormwater management system.

B) Maintenance Inspections

1. Stormwater management facilities and practices included in the LAND DISTURBANCE PERMIT with a Maintenance Agreement in accordance with Section 6.K of these Regulations must undergo regular ongoing inspections to document maintenance, repair, replacement and disposal needs and ensure compliance with the requirements of the agreement, these Regulations, and the MASSACHUSETTS STORMWATER HANDBOOK.

2. A Maintenance Agreement as specified under Section 6.K of these Regulations between the OWNER and the Board shall be executed for privately-owned stormwater management systems that specify the PERSON for conducting long term inspections.

3. At a minimum, inspections shall occur consistent with the Operation and Maintenance requirements outlined in each project's STORMWATER PERMIT application. All BMPs require –at a minimum – annual maintenance. Some BMPs may require more frequent inspection, as specified in the STORMWATER PERMIT.

4. Inspection reports shall be submitted to the Engineering Department for all stormwater management systems. Inspection reports for stormwater management systems shall include at a minimum:

    a) The date of inspection;
    b) Weather conditions, including temperature and precipitation, if any;
    c) Name and signature of inspector;
    d) The condition of:
        i. Pretreatment devices
        ii. Vegetation or filter media
        iii. Fences or other safety devices
        iv. Spillways, valves, or other control structures
        v. Embankments, slopes, and safety benches
        vi. Reservoir or treatment areas
        vii. Inlet and outlet channels and structures
        viii. Underground drainage
        ix. Sediment and debris accumulation in storage and fore bay areas (including catch basins)
        x. Any nonstructural practices
        xi. Any other item that could affect the proper function of the stormwater management system
    e) Description of the need for maintenance.
    f) In the event that maintenance activities are performed by a private contractor, a copy of the contract or agreement to provide the maintenance.

C) Right-of-Entry for Inspection

The terms of the Maintenance Agreement as specified in Section 6.K of these Regulations shall provide for the Engineering Department or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection.

D) Records of Inspections, Maintenance, Repair, Replacement and Operations
OWNERs are responsible for the operation and maintenance of a stormwater management facility shall prepare records of the installation and of all inspections, maintenance, repairs, replacement, and disposal activities, and shall retain the records for at least five years. These records shall be submitted to the Engineering Department annually, at a minimum, and upon request. For disposal, the record must indicate the type of material, quantity of material, and disposal location.

E) Failure to Maintain

1. If the OWNER fails or refuses to meet the requirements of the Maintenance

Agreement, the Engineering Department, after 30 days' written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24-hour notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the facility or practice in proper working condition. The Engineering Department may assess the OWNER(s) of the facility for the cost of repair work, which shall be a lien on the property.

2. After notification is provided to the PERSON responsible for carrying out the maintenance plan of any deficiencies discovered from an inspection of a stormwater management system, the PERSON responsible for carrying out the maintenance plan shall have 30 days or other time frame mutually agreed to between the Engineering Department and the PERSON responsible for carrying out the maintenance plan to correct the deficiencies. The Engineering Department shall then conduct a subsequent inspection to ensure completion of repairs.

11.0 ILLICIT DISCHARGES

Any property owner or party, who illegally discharges non-stormwater pollutants, including sanitary sewer discharges, as described in the Stormwater Management Bylaw, Section 159, must eliminate discharges to the MS4 system within 60 days of identification.

12.0 ENFORCEMENT

A) Enforcement powers of the Select Board or its designee are granted in the Stormwater Management Bylaw, Section 159.9.

B) Notices and Orders

1. The Select Board or an authorized agent of the Select Board may issue a written notice of violation or enforcement order to enforce the provisions of the Stormwater Management Bylaw and these Regulations, which may include:

   a) Elimination of illicit connections or discharges to the MS4;
   b) That unlawful discharges, practices, or operations shall cease and desist;
   c) Remediation of contamination in connection therewith;
   d) Suspension or revoke of approval of any STORMWATER PERMIT;
   e) Cease and desist from all or a portion of construction or land disturbing activity until there is compliance with the Bylaw and the STORMWATER PERMIT;
   f) Repair, maintain, or replace the stormwater management system or portions thereof in accordance with the Maintenance Agreement;
   g) Perform monitoring, analyses, and reporting; and/or
   h) Fix adverse impact resulting directly or indirectly from malfunction of the stormwater management system.

2. The suspension or revocation of the STORMWATER PERMIT shall not relieve the Applicant of his obligation thereunder except at the discretion of the Board.

C) Any PERSON who purchases, inherits or otherwise acquires real estate upon which work has been done in violation of the provisions of the Stormwater Management Bylaw and these Regulations, or in violation of the approved Plans under this Section shall forthwith comply with any such Order, and restore such real estate to its condition prior to such violation, as the applicable Board, Commission, or Engineering Department deems necessary to remedy such violation.

D) Criminal Violation. Any PERSON who violates any provision of the Town of Stoughton Stormwater Management Bylaw, these Regulations, or order or permit issued thereunder, may be ordered to correct the violation and/or shall be punished by a fine of not more than $300.00, excluding the cost of damages. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

E) Non-Criminal Disposition. As an alternative to criminal prosecution or civil action, the Town of Stoughton may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch. 40, §21D and the Town of Stoughton General Bylaws Chapter 1.2 A in which case the Board shall be the enforcing PERSON. The provisions of the General Bylaws Chapter 1.2 A as to the monetary penalties shall prevail. The penalty for the 1st violation shall be $100.00. The penalty for the 2nd and subsequent violations shall be $300.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

F) Entry to Perform Duties Under these Regulations. 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 these Regulations and may make or cause to be made such examinations, surveys or sampling as the Board deems reasonably necessary.

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

H) Remedies Not Exclusive. The remedies listed in these Regulations are not exclusive of any other remedies available under any applicable federal, state or local law.

13.0 SEVERABILITY

The invalidity of any section, provision, paragraph, sentence, or clause of these Regulations shall not invalidate any section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

APPENDIX A

SUMMARY OF STORMWATER PERMIT PROCESS

STORMWATER PERMIT PROCESS
Permit Authority
Stoughton Select Board
⇩
Applicability
Land Development Projects with greater than 1 acre of Land Disturbance (i.e. commercial site plans, subdivisions, etc.)
⇩
Permit Requirements
Application
Filing Fee
Site Plans
Description of Low Impact Design Measures
Stormwater Report demonstrating compliance with MA Stormwater Management Standards and Massachusetts MS4 performance standards)
Operation and Maintenance Plan
Erosion & Sediment Control Plan
Stormwater Pollution Prevention Plan (SWPPP)
⇩
Public Hearings and Meetings
Permit is reviewed by the Enginering Department during public hearings and/or meetings through the Planning Board and/or Conservation Commission
All projects reviewed by Stoughton Engineering Department
⇩
Stormwater Inspections
Erosion Controls installed prior to construction
Erosion Controls inspected weekly by Owner representative
Infiltration facilities bottom inspection prior to component install (Open Hole)
Stormwater Management System component inspection prior to backfill
Final Inspection and As-built Review
⇩
Final Approval
Illicit Discharge Compliance Statement submittal
Final Certification of Design Engineer
Final review and approval of Town Engineer

APPENDIX B

STORMWATER PERMIT APPLICATION

STOUGHTON
MASSACHUSETTS

Stormwater Management Permit Application

Permit Applicability

How much New Impervious Area (square feet) will result from the Project?	How much Disturbed Land Area will result from the Project?

Town Engineer's Approval as to Applicability: Y/N _____ Signature:

Property Owner Information:

Name		**Signature**	
Address		**City, State, Zip**	
Email		**Phone**	

Applicant Information:

Name		**Signature**	
Address		**City, State, Zip**	
Email		**Phone**	

Applicant Representative:

Name		**Signature**	
Address		**City, State, Zip**	
Email		**Phone**	

Project Information:

Address						
City			**State**		**Zip**	
Property Information	**Map**	**Block**	**Lot**	**Unit**	**Lot Area**	

Description of Project	
List Zoning Districts *Include all Districts including Overlay Districts*	
Surface Waters to which the Project Discharges	
Other Permits Requested/Received *Attach additional sheets if needed*	

Stormwater Management Permit Application (Continued)				
Project Specifics	**Yes**	**No**	**N/A**	**Description** *(Attach additional sheets as needed)*
Will the project result in the disturbance of one or more acres of land?	☐	☐	☐	
Will the project result in the discharge of stormwater to Critical Areas with Sensitive Resources as described by Massachusetts Stormwater Management Standard No. 6?	☐	☐	☐	
Will the project discharge stormwater to an impaired water body?	☐	☐	☐	
Will the project include the construction of Stormwater Management Facilities?	☐	☐	☐	
Will the construction activity be located within the Town's MS4 area?	☐	☐	☐	

Submission Checklist

- Completed Application form with original signatures and Fee
- Project Narrative describing existing conditions, proposed development and methods used to mitigate stormwater impacts. Narrative should include the evaluation and implementation of Low Impact Development Management Practices for stormwater management.
- Stormwater Management Plan stamped by a Registered Professional Engineer to include at a minimum the following:
  - Existing Conditions Plan with Property Information, existing grades taken from a topographic survey, existing utilities, drainage, tree line, wetland boundaries, flood zones, and soils classifications.
  - Proposed work shall include all site layout, grading, utilities, stormwater management systems, soil testing data, proposed tree line, and limit of work.
- Stormwater Report signed and stamped by Registered Professional Engineer that includes:
  - Completed MassDEP Stormwater Checklist
  - Pre & Post development hydrologic calculations
  - Hydraulic calculations for all pipes, swales, etc.
- Stormwater Pollution and Prevention Plan (SWPPP)
- Operations and Maintenance Plan in accordance with the Regulations

Filing Fees

1. General. A non-refundable application fee shall be due and payable to the Town of Stoughton at the time an application is filed. The application fee will be used for processing of the application, coordination of Town staff, inspections by Town staff and other expenses connected with the review of the application by Town staff.

2. Rules

   a) Stormwater Permit Application and Review Fees are non-refundable. All fees shall be calculated by the Engineering Department in accordance with the fee schedule in Table 1 below.
   b) These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local Bylaw.
   c) Federal, State, and Municipal projects shall be exempt from Application Fees associated with a STORMWATER PERMIT.
   d) The fee includes two follow-up reviews for plan and document revisions.
   e) The fees denoted below shall not be used to calculate review fees for outside consultants. Additional review fees may be charged to cover outside professional consultant review services for a project if the Town Engineer determines that such services are necessary due to the scope and complexity of the project.

Filing Fee Schedule for Stormwater Permits

Application Type	Fee
Disturbance area is 1.0 to 2.0 acres	$1,000
Disturbance area is 2.0 to 5 acres	$1,500
Disturbance area is 5.0 to 10.0 acres	$2,000
Disturbance area of 10.0 acres or more	$2,500

Signatures

I hereby certify under the penalties of perjury that the submitted plans, documents and supporting data are true, accurate and in compliance with the Town Stormwater Management By-law and Regulations.

_____ _____

Signature of applicant Date

_____ _____

Signature of Representative's Engineer Date

APPENDIX C

STORMWATER PERMIT VIOLATION FORM

STOUGHTON
MASSACHUSETTS

NOTICE OF VIOLATION

Town of Stoughton Rules & Regulations for Stormwater Management

DATE:	
TOWN INSPECTOR:	
PROPERTY ADDRESS:	
PROPERTY OWNER:	
PROPERTY OWNER CONTACT INFORMATION **PHONE:**	**EMAIL:**
NATURE OF VIOLATION:	
REGULATION SECTION CITED:	

WARNING ☐

1st OFFENSE ☐

SUBSEQUENT OFFENSE ☐

FINE AMOUNT:		
ISSUED BY:	**SIGNED:**	**DATE:**

APPENDIX I
Annual Reports

Year 1 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: May 1, 2018-June 30, 2019

Please DO NOT attach any documents to this form. Instead, attach all requested documents to an email when submitting the form

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed.

Part I: Contact Information

Name of Municipality or Organization: Town of Stoughton

EPA NPDES Permit Number: MAR041063

Primary MS4 Program Manager Contact Information

Name: Marc J. Tisdelle, P.E. Title: Town Engineer

Street Address Line 1: Town Hall

Street Address Line 2: 10 Pearl Street, 2nd floor

City: Stoughton State: MA Zip Code: 02072

Email: mtisdelle@stoughton-ma.gov Phone Number: (781) 341-1300

Fax Number: (781) 341-1086

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.stoughton.org/sites/stoughtonma/files/uploads/stoughton_swmp_report_-_6-20-19_-_public_comment_signed.pdf

Date SWMP was Last Updated: Jun 28, 2019

If the SWMP is not available on the web please provide the physical address and an explanation of why it is not posted on the web:

Part II: Self Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4.

Impairment(s)

☒ Bacteria/Pathogens ☐ Chloride ☒ Nitrogen ☒ Phosphorus
☒ Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State: ☐ Assabet River Phosphorus ☒ Bacteria and Pathogen ☐ Cape Cod Nitrogen
☐ Charles River Watershed Phosphorus ☐ Lake and Pond Phosphorus

Out of State: ☐ Bacteria/Pathogens ☐ Metals ☐ Nitrogen ☐ Phosphorus

Clear Impairments and TMDLs

Next, check off all requirements below that have been completed. ***By checking each box you are certifying that you have completed that permit requirement fully.*** *If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.*

Year 1 Requirements

- ☒ Develop and begin public education and outreach program
- ☒ Identify and develop inventory of all known locations where SSOs have discharged to the MS4 in the last 5 years
  - ◉ The SSO inventory is attached to the email submission
  - ○ The SSO inventory can be found at the following website:
- ☒ Develop written IDDE plan including a procedure for screening and sampling outfalls
- ☒ IDDE ordinance complete
- ☒ Identify each outfall and interconnection discharging from MS4, classify into the relevant category, and priority rank each catchment for investigation
  - ◉ The priority ranking of outfalls/interconnections is attached to the email submission
  - ○ The priority ranking of outfalls/interconnections can be found at the following website:
- ☒ Construction/ Erosion and Sediment Control (ESC) ordinance complete
- ☒ Develop written procedures for site inspections and enforcement of sediment and erosion control measures
- ☒ Develop written procedures for site plan review
- ☒ Keep a log of catch basins cleaned or inspected
- ☒ Complete inspection of all stormwater treatment structures

Annual Requirements

- ☒ Annual opportunity for public participation in review and implementation of SWMP
- ☒ Comply with State Public Notice requirements
- ☒ Keep records relating to the permit available for 5 years and make available to the public
- ☒ Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- ☒ Annual training to employees involved in IDDE program
- ☒ All curbed roadways have been swept a minimum of one time per year

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- ☒ Annual message encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- ☒ Permittee or its agents disseminate educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- ☒ Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Nitrogen (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- ☒ Distribute an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers
- ☒ Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- ☒ Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

- ☒ Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

- ☐ Any structural BMPs listed in Table 3 of Attachment 1 to Appendix H already existing or installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the nitrogen removal by the BMP consistent with Attachment 1 to Appendix H. Document the BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated nitrogen removed in mass per year by the BMP in each each annual report

Phosphorus (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

☒ Distribute an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorus-free fertilizers

☒ Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate

☒ Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

☐ Any structural BMPs listed in Table 3 of Attachment 1 to Appendix H already existing or installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the phosphorus removal by the BMP consistent with Attachment 1 to Appendix H. Document the BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP in each each annual report

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increase street sweeping frequency of all municipal owned streets and parking lots to a schedule to target areas with potential for high pollutant loads

☒ Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full; Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings

Use the box below to input additional details on any unchecked boxes above or any additional information you would like to share as part of your self assessment:

Structural BMPs will be tracked and estimates for nutrient removal developed in accordance with Attachment 1 to Appendix H in the future.

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

Yes ☐ No ☒

If yes, describe below, including any relevant impairments or TMDLs:

N/A

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed during the reporting period: 33

Below, report on the educational messages completed during the first year. For the measurable goal(s) please describe the method/measures used to assess the overall effectiveness of the educational program.

BMP: Pet Waste Management Message

Message Description and Distribution Method:

"Do your Doody for Clean Water" message from ThinkBlue on management of pet waste; social media post shared on the Stoughton Facebook page.

The Town is utilizing ThinkBlue's outreach campaign materials as part of its education and outreach efforts.

Targeted Audience: Residents

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Bacteria/Pathogen impairment; 7,170 people reached

Message Date(s): June 7, 2019

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Fowl Water Campaign

Message Description and Distribution Method:

"Stormwater pollution is trash, oil, cigarette butts & dog waste" messaging in Think Blue MA's "Fowl Water" video and advertisement campaign on Facebook, Instagram and YouTube.

Targeted Audience: Residents

Responsible Department/Parties: Southeast Regional Services Group (SERSG)

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

18,213 people reached on Facebook/Instagram. 32,288 people reached on YouTube.

Message Date(s): June 23, 2019 - June 30, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Gas Station Pollution Message

Message Description and Distribution Method:

"Put a brake on stormwater runoff from gas stations" stormwater pollution awareness from Think Blue; social media post shared on the Stoughton Facebook page.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: SERSG

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): January 31, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Businesses, Institutions and Commercial Facilities-Specific Stormwater Website

Message Description and Distribution Method:

Maintained stormwater website with stormwater outreach materials; linked Neponset Stormwater Partnership website from the Town of Stoughton's stormwater web-page.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

1266 site visits and 5280 page views.

Message Date(s): Webpage activated May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Stormwater Brochures

Message Description and Distribution Method:

Stormwater pollution awareness through Brochures/Pamphlets.

Targeted Audience: Developers (construction)

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): July 8, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Developers-Specific Stormwater Website

Message Description and Distribution Method:

Maintained stormwater website with developer-specific stormwater outreach materials; Distributed via Neponset Stormwater Partnership website with link from Town of Stoughton's stormwater webpage.

Targeted Audience: Developers (construction)

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

1266 site visits and 5280 page views.

Message Date(s): Webpage activated May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Ignore

Message Description and Distribution Method:

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☐

If yes, describe why the change was made:

BMP: Industry-Specific Stormwater Website

Message Description and Distribution Method:

Maintained stormwater website with industry-specific stormwater outreach materials; Distributed via Neponset Stormwater Partnership website with link from Town of Stoughton's stormwater webpage.

Targeted Audience: Industrial facilities

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

1266 site visits and 5280 page views.

Message Date(s): Webpage activated May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Spring Messaging

Message Description and Distribution Method:

Encourages proper use and disposal of grass clippings, leaf litter (Nitrogen & Phosphorus), and slow-release fertilizers (Nitrogen); "Leave grass clippings to fertilize lawn naturally; Know before you mow!" social media post on Stoughton Facebook page and Twitter account; Printed and distributed informational cards to Library, Town Hall and the Council on Aging/Youth Commission.

Targeted Audience: Residents

Responsible Department/Parties: SERSG

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Nitrogen and Phosphorus impairments.

Message Date(s): March 18, 2019; May 22, 2019

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Pet Waste Information (one of two)

Message Description and Distribution Method:

Encourages proper management of pet waste (noting any ordinances); Educational fliers distributed at time of issuance or renewal of dog license.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Town Clerk and Neponset River Watershed Association

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Nitrogen, Phosphorus and Bacteria/Pathogens impairments.

1400 reached in Stoughton; estimated 81% of dog owners reached.

Message Date(s): Distributed to Town Clerks in January, 2019 and disseminated since

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Pet Waste Information (two of two)

Message Description and Distribution Method:

Encourages proper management of pet waste (noting any ordinances); Educational fliers distributed at time of issuance or renewal of dog license.

Targeted Audience: Residents

Responsible Department/Parties: Town Clerk and Neponset River Watershed Association

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Nitrogen, Phosphorus and Bacteria/Pathogens impairments.

1400 reached in Stoughton; estimated 81% of dog owners reached.

Message Date(s): Distributed to Town Clerks in January, 2019 and disseminated since

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Fall Messaging (one of two)

Message Description and Distribution Method:

Fall leaf waste campaign; "Don't Leaf Clean Water to Chance" social media campaign (Neponset River Watershed Association's Facebook and Twitter and Town's Facebook and Twitter) and paper flyer with local information on yard waste disposal options distributed at Town Hall and Town website.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Regionally, 2213 people reached on Facebook and 1031 reached through Twitter.

Message Date(s): October 2-31, 2018

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Fall Messaging (two of two)

Message Description and Distribution Method:

Fall leaf waste campaign; "Don't Leaf Clean Water to Chance" social media campaign (Neponset River Watershed Association's Facebook and Twitter and Town's Facebook and Twitter) and paper flyer with local information on yard waste disposal options distributed at Town Hall and Town website.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Regionally, 2213 people reached on Facebook and 1031 reached through Twitter.

Message Date(s): October 2-31, 2018

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Septic Tank Messaging

Message Description and Distribution Method:

Outreach to encouraged proper maintenance of septic tanks in catchments that discharge to waterbodies with bacteria impairments on Neponset Stormwater Partnership website.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute annual messaging in accordance with the Town’s Bacteria/Pathogens impairment.

Message Date(s): May 8, 2018 and on going

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: School Program

Message Description and Distribution Method:

Hands-on watershed education curriculum for 4th and 5th grade students over the course of two 60-minute lessons; take-home flyers provided; School curriculum; link to information from Town's stormwater web page.

Targeted Audience: Residents

Responsible Department/Parties: Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): September 2018 - June 2019 (school year)

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Household Hazardous Waste Collection Day

Message Description and Distribution Method:

Household hazardous waste collection day.

Targeted Audience: Residents

Responsible Department/Parties: DPW Operations, Engineering

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): May 6, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Ignore

Message Description and Distribution Method:

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☐

If yes, describe why the change was made:

BMP: Ignore

Message Description and Distribution Method:

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☐

If yes, describe why the change was made:

BMP: Ignore

Message Description and Distribution Method:

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☐

If yes, describe why the change was made:

BMP: Ignore

Message Description and Distribution Method:

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☐

If yes, describe why the change was made:

BMP: Stoughton Stormwater Website with Notification System

Message Description and Distribution Method:

Town maintained Stoughton stormwater website with stormwater outreach materials including information on septic maintenance, fertilizers and leaves and grass clippings; Website now includes Town Resident Notification System for stormwater alerts on Town News section of the website.

Targeted Audience: Residents

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): October 2017 and continuing

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Resident-Specific Stormwater Website

Message Description and Distribution Method:

Maintained stormwater website with stormwater outreach materials; Website includes a link to the Neponset Stormwater Partnership website.

Targeted Audience: Residents

Responsible Department/Parties: DPW Operations, Engineering, Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

1266 site visits and 5280 page views.

Message Date(s): Webpage activated May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Business, Institutions and Commercial Facilities Hotline

Message Description and Distribution Method:

Regional hotline to field questions and report stormwater problems.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): Live May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Developers Hotline

Message Description and Distribution Method:

Regional hotline to field questions and report stormwater problems.

Targeted Audience: Developers (construction)

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): Live May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Industrial Facilities Hotline

Message Description and Distribution Method:

Regional hotline to field questions and report stormwater problems.

Targeted Audience: Industrial facilities

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): Live May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Resident Hotline

Message Description and Distribution Method:

Regional hotline to field questions and report stormwater problems.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): Live May 1, 2018 and ongoing since

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Regional Mailing #1

Message Description and Distribution Method:

Regional Educational Mailing #1 (highlighting general stormwater awareness, a storm drain mural project, stormwater hotline information and pet waste/fertilizer information); Postcard sent to all residential addresses.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years)

100% of households reached.

Message Date(s): July 9, 2018

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: Regional Mailing #2

Message Description and Distribution Method:

Regional Educational Mailing #2 (newsletter highlighting stormwater awareness, fertilizers/lawn care/ pollution/pet waste/household waste/dumpsters and stormwater hotline); Mailed to all addresses.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years)

100% of households reached.

Message Date(s): July 8, 2018

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

BMP: ThinkBlue Duckie Video #1

Message Description and Distribution Method:

ThinkBlue "Duckie" Video #1 distributed via Facebook and YouTube and on ThinkBlue MA website.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): May 31-June 25 2018

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☒ No ☐

If yes, describe why the change was made:

This outreach done by ThinkBlue on behalf of Stoughton has added to the outreach included in the NOI.

BMP: ThinkBlue Duckie Video #2

Message Description and Distribution Method:

ThinkBlue "Duckie" Video #2 distributed via Facebook and YouTube and on ThinkBlue MA website.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

Message Date(s): June 24-July 5, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☒ No ☐

If yes, describe why the change was made:

This outreach done by ThinkBlue on behalf of Stoughton has added to the outreach included in the NOI.

BMP: Water Quality Forum

Message Description and Distribution Method:

Regional Water Quality Forum about data collected in the Neponset River Watershed and public presentation.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute at least two educational messages within the permit term (5 years).

25 people attended from region.

Message Date(s): February 7, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

This outreach done by the Neponset River Watershed Association on behalf of Stoughton has added to the outreach included in the NOI.

BMP: Fall Messaging on Social Media

Message Description and Distribution Method:

Social media post shared on the Stoughton Facebook page in the Fall encouraging the proper disposal of leaf litter.

Targeted Audience: Residents

Responsible Department/Parties: Neponset River Watershed Association

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Nitrogen, Phosphorus and Bacteria/Pathogens impairments.

Message Date(s): October 26, 2018

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ☐ No ☒

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

Describe the opportunity provided for public involvement in the development of the Stormwater Management Program (SWMP) during the reporting period:

Annual review of the Stormwater Management Plan; posting of plan on website and annual public comment.

Was this opportunity different than what was proposed in your NOI? Yes ☐ No ☒

Describe any other public involvement or participation opportunities conducted during the reporting period:

MA Statewide Municipal Stormwater Coalition (Statewide Coalition). Think Blue MA public awareness campaign and regional collaboration on stormwater at the following public events: Metrowest/495 Partnership, Metrowest stormwater roundtable hosted by MWRC of MAPC, MMA meeting & trade show, New England Water Environment Association annual conference, MACC annual conference, MA congress of Lake and Pond associations annual workshop, New England public works association spring conference, Ecotarium Earth Day, New England Water Environment Association spring meeting.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Below, report on the number of SSOs identified in the MS4 system and removed during this reporting period.

Number of SSOs identified: 2

Number of SSOs removed: 2

Below, report on the total number of SSOs identified in the MS4 system and removed to date. At a minimum, report SSOs identified since 2013.

Total number of SSOs identified: 11

Total number of SSOs removed: 11

MS4 System Mapping

Describe the status of your MS4 map, including any progress made during the reporting period:

Previously, Stoughton has mapped: outfalls and receiving waters, interconnections with other MS4s and other storm sewer systems, municipality-owned stormwater treatment structures, water bodies identified by name and indication of all use impairments as identified on the most recent EPA-approved MA Integrated List of Waster report and initial catchment delineations. During this reporting period, Stoughton contracted a consulting company to map and inspect BMP sites, noting BMP type and condition, and inspect town-owned facilities for potential contributions to illicit stormwater discharge. Additionally, the consulting firm screened 65 MS4 outfalls, or approximately 25% of all outfalls, during dry weather conditions and recorded information including outfall diameter, material, condition, storm sewer connectivity and receiving water, and flow and sediment descriptions. For outfalls that were flowing, temperature, dissolved oxygen, salinity, specific conductance, pH, biological oxygen demand, total Phosphorus, total residual Chlorine, Ammonia as Nitrogen, Surfactants and E. Coli were tested.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses.

- (●) The outfall screening data is attached to the email submission
- ( ) The outfall screening data can be found at the following website:

Below, report on the number of outfalls/interconnections screened during this reporting period.

Number of outfalls screened: 65

Below, report on the percent of total outfalls/ interconnections screened to date.

Percent of total outfalls screened: 25

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- (●) The catchment investigation data is attached to the email submission
- ( ) The catchment investigation data can be found at the following website:

Below, report on the number of catchment investigations completed during this reporting period.

Number of catchment investigations completed this reporting period: 0

Below, report on the percent of catchments investigated to date.

Percent of total catchments investigated: 0

Optional: Provide any additional information for clarity regarding the catchment investigations below:

Flowing outfalls were sampled during dry weather IDDE investigations and will be further investigated in the future. No catchment investigations have been completed at this time.

IDDE Progress

If illicit discharges were found, please submit a document describing work conducted over this reporting period, and cumulative to date, including location source; description of the discharge; method of discovery; date of discovery; and date of elimination, mitigation, or enforcement OR planned corrective measures and schedule of removal.

- (●) The illicit discharge removal report is attached to the email submission
- ( ) The illicit discharge removal report can be found at the following website:

Below, report on the number of illicit discharges identified and removed, along with the volume of sewage removed during this reporting period.

Number of illicit discharges identified: 1

Number of illicit discharges removed: 0

Estimated volume of sewage removed: 0 [UNITS]

Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed since the effective date of the permit.

Total number of illicit discharges identified: 1

Total number of illicit discharges removed: 0

Optional: Provide any additional information for clarity regarding illicit discharges identified, removed, or planned to be removed below:

One illicit discharges was identified this period and a discharge report is attached documenting the investigations undertaken to date.

Employee Training

Describe the frequency and type of employee training conducted during the reporting period:

Annual stormwater training for Town department heads.

MCM4: Construction Site Stormwater Runoff Control

Below, report on the construction site plan reviews, inspections, and enforcement actions completed during this reporting period.

Number of site plan reviews completed: 40

Number of inspections completed: 106

Number of enforcement actions taken: 7

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

Ordinance Development

Describe the status of the post-construction ordinance required to be complete in year 2 of the permit term:

Drafted.

As-built Drawings

Describe the status of the measures the MS4 has utilized to require the submission of as-built drawings and ensure long term operation and maintenance of completed construction sites required to be complete in year 2 of the permit term:

As-built drawings are required for all new construction (residential and commercial). Operation and Maintenance Plans are required for all commercial site plans. The O&M Plans are required to be recorded at the Registry of Deeds to ensure the Maintenance is know to current and future owners and enforcement can be implemented by the Town if necessary.

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

None to date.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

None to date.

Retrofit Properties Inventory

Describe the status of the inventory, due in year 4 of the permit term, of permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas and report on any properties that have been modified or retrofitted:

None to date.

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

Catch basins were not cleaned during this reporting period since the Town's catch basin cleaner vehicle has bee

If complete, attach the catch basin cleaning optimization plan or the schedule to gather information to develop the optimization plan:

- (●) The catch basin cleaning optimization plan or schedule is attached to the email submission
- ( ) The catch basin cleaning optimization plan or schedule can be found at the following website:

Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins during this reporting period.

Number of catch basins inspected: 0

Number of catch basins cleaned: 0

Total volume or mass of material removed from all catch basins: 0 [UNITS]

Below, report on the total number of catch basins in the MS4 system, if known.

Total number of catch basins: 3167

If applicable:

Report on the actions taken if a catch basin sump is more than 50% full during two consecutive routine inspections/cleaning events:

N/A

Street Sweeping

Describe the status of the written procedures for sweeping streets and municipal-owned lots:

Completed.

Report on street sweeping completed during the reporting period using one of the three metrics below.

- (●) Number of miles cleaned: 112
- ( ) Volume of material removed: 130 Cubic Yards
- ( ) Weight of material removed: [UNITS]

If applicable:

For rural uncurbed roadways with no catch basins, describe the progress of the inspection, documentation, and targeted sweeping plan:

All streets are swept annually, regardless of the presence of curbing or stormwater structures.

Winter Road Maintenance

Describe the status of the written procedures for winter road maintenance including the storage of salt and sand:

Nothing to date. All road salt is stored under cover in a salt shed located at 950 Central Street.

Inventory of Permittee-Owned Properties

Describe the status of the inventory, due in year 2 of the permit term, of permittee-owned properties, including parks and open spaces, buildings and facilities, and vehicles and equipment, and include any updates:

Completed in 2016 and updated in 2019.

O&M Procedures for Parks and Open Spaces, Buildings and Facilities, and Vehicles and Equipment

Describe the status of the operation and maintenance procedures, due in year 2 of the permit term, of permittee-owned properties (parks and open spaces, buildings and facilities, vehicles and equipment) and include maintenance activities associated with each:

Nothing to date.

Stormwater Pollution Prevention Plan (SWPPP)

Describe the status of any SWPPP, due in year 2 of the permit term, for permittee-owned or operated facilities including maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater:

The Town has hired a consultant to draft SWPPP during Year 2 of the permit.

Below, report on the number of site inspections for facilities that require a SWPPP completed during this reporting period.

Number of site inspections completed: 0

Describe any corrective actions taken at a facility with a SWPPP:

N/A

O&M Procedures for Stormwater Treatment Structures

Describe the status of the written procedure for stormwater treatment structure maintenance:

Drafted a Standard Operating Procedure (SOP) for municipal stormwater treatment systems, operation and inspection SOP.

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- (●) Not applicable
- ( ) The results from additional reports or studies are attached to the email submission
- ( ) The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

N/A

Additional Information

Optional: Enter any additional information relevant to your stormwater management program implementation during the reporting period. Include any BMP modifications made by the MS4 if not already discussed above:

Two additional standard operating procedures (SOPs) have been drafted at this time: MCM-4 construction site runoff and site inspection SOP and MCM-5 development and redevelopment coordinated site plan review SOP.

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 2 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

- Complete system mapping Phase I
- Begin investigations of catchments associated with Problem Outfalls
- Develop or modify an ordinance or other regulatory mechanism for post-construction stormwater runoff from new development and redevelopment
- Establish and implement written procedures to require the submission of as-built drawings no later than two years after the completion of construction projects
- Develop, if not already developed, written operations and maintenance procedures
- Develop an inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; review annually and update as necessary
- Establish a written program detailing the activities and procedures the permittee will implement so that the MS4 infrastructure is maintained in a timely manner
- Develop and implement a written SWPPP for maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater
- Enclose or cover storage piles of salt or piles containing salt used for deicing or other purposes
- Develop, if not already developed, written procedures for sweeping streets and municipal-owned lots
- Develop, if not already developed, written procedures for winter road maintenance including storage of salt and sand
- Develop, if not already developed, a schedule for catch basin cleaning
- Develop, if not already developed, a written procedure for stormwater treatment structure maintenance
- Develop a written catchment investigation procedure *(18 months)*

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4 in the last 5 years
- Continue public education and outreach program

- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all uncurbed streets at least annually

Provide any additional details on activities planned for permit year 2 below:

The Town will continue to work with the Neponset River Watershed Association and ThinkBlue to continue and expand the stormwater education and outreach it currently completes. Stoughton will begin attaching stormwater information packets to all permit applications.

Part V: Certification of Small MS4 Annual Report 2019

40 CFR 144.32(d) 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 gather and evaluate 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, I certify that 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.

Name:	Robin A Grimm	Title:	Town Manager
Signature:		Date:	09/27/19

[Signatory may be a duly authorized representative]

Year 2 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2019-June 30, 2020

Please DO NOT attach any documents to this form. Instead, attach all requested documents to an email when submitting the form

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed. Please ONLY report on activities between July 1, 2019 and June 30, 2020 unless otherwise requested.

Part I: Contact Information

Name of Municipality or Organization: Town of Stoughton

EPA NPDES Permit Number: MAR041063

Primary MS4 Program Manager Contact Information

Name: Marc J. Tisdelle, P.E. Title: Executive Director of Development Services/ Town Engineer

Street Address Line 1: Town Hall

Street Address Line 2: 10 Pearl Street, 2nd floor

City: Stoughton State: MA Zip Code: 02072

Email: mtisdelle@stoughton-ma.gov Phone Number: (781) 341-1300

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.stoughton.org/sites/stoughtonma/files/uploads/stoughton_swmp_report_-_6-20-19_-_public_comment_signed.pdf

Date SWMP was Last Updated: September 2020

If the SWMP is not available on the web please provide the physical address:

Part II: Self-Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4. Make sure you are referring to the most recent EPA approved Section 303(d) Impaired Waters List which can be found here: https://www.epa.gov/tmdl/region-1-impaired-waters-and-303d-lists-state

Impairment(s)

☒ Bacteria/Pathogens ☐ Chloride ☒ Nitrogen ☒ Phosphorus
☒ Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State: ☐ Assabet River Phosphorus ☒ Bacteria and Pathogen ☐ Cape Cod Nitrogen
☐ Charles River Watershed Phosphorus ☐ Lake and Pond Phosphorus

Out of State: ☐ Bacteria/Pathogens ☐ Metals ☐ Nitrogen ☐ Phosphorus

Clear Impairments and TMDLs

Next, check off all requirements below that have been completed. ***By checking each box you are certifying that you have completed that permit requirement fully.*** *If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.*

Year 2 Requirements

- ☒ Completed Phase I of system mapping
- ☒ Developed a written catchment investigation procedure and added the procedure to the SWMP
- ☒ Developed written procedures to require the submission of as-built drawings and ensure the long term operation and maintenance of completed construction sites and added these procedures to the SWMP
- ☒ Enclosed or covered storage piles of salt or piles containing salt used for deicing or other purposes
- ☒ Developed written operations and maintenance procedures for parks and open space, buildings and facilities, and vehicles and equipment and added these procedures to the SWMP
- ☒ Developed an inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment and added this inventory to the SWMP
- ☒ Completed a written program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- ☒ Developed written SWPPPs, included in the SWMP, for all of the following permittee owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Phase I mapping has been drafted and will be updated throughout Year 3

Annual Requirements

- ☒ Provided an opportunity for public participation in review and implementation of SWMP and complied with State Public Notice requirements
- ☒ Kept records relating to the permit available for 5 years and made available to the public
- ☐ The SSO inventory has been updated, including the status of mitigation and corrective measures implemented
  - ○ This is not applicable because we do not have sanitary sewer
  - ◉ This is not applicable because we did not find any new SSOs
  - ○ The updated SSO inventory is attached to the email submission
  - ○ The updated SSO inventory can be found at the following website:
- ☒ Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters
- ☒ Provided training to employees involved in IDDE program within the reporting period
- ☒ All curbed roadways were swept at least once within the reporting period
- ☒ Updated outfall and interconnection inventory and priority ranking as needed

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above annual requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- ☒ Annual message was distributed encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- ☒ Permittee or its agents disseminated educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- ☒ Provided information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

Nitrogen (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

☒ Distributed an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers

☒ Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate

☒ Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increased street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

☐ Any structural BMPs listed in Table 3 of Attachment 1 to Appendix H already existing or installed in the regulated area by the permittee or its agents was tracked and the nitrogen removal by the BMP was estimated consistent with Attachment 1 to Appendix H. The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated nitrogen removed in mass per year by the BMP were documented.

- ○ The BMP information is attached to the email submission
- ○ The BMP information can be found at the following website:

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

Phosphorus (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

☒ Distributed an annual message in the spring (April/May) encouraging the proper use and disposal of grass clippings and encouraging the proper use of slow-release and phosphorus-free fertilizers

☒ Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate

☒ Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increased street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

☐ Any structural BMPs already existing or installed in the regulated area by the permittee or its agents was tracked and the phosphorus removal by the BMP was estimated consistent with Attachment 3 to Appendix F. The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP were documented.

- ○ The BMP information is attached to the email submission
- ○ The BMP information can be found at the following website:

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increased street sweeping frequency of all municipal owned streets and parking lots to a schedule that targets areas with potential for high pollutant loads

☒ Prioritized inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full; Cleaned catch basins more frequently if inspection and maintenance activities indicated excessive sediment or debris loadings

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

Optional: Use the box below to provide any additional information you would like to share as part of your self-assessment:

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

- (•) Yes
- ( ) No

If yes, describe below, including any relevant impairments or TMDLs:

As seen in the Massachusetts Year 2016 Integrated List of Waters, Beaver Meadow Brook (MA73-20; Category 5 Water) and Steep Hill Brook (MA73-18; Category 5 Water) are now impaired for E.coli in addition to the impairments listed in the Massachusetts Year 2014 Integrated List of Waters.

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed **during this reporting period**: 18

*Below, report on the educational messages completed **during this reporting period**. For the measurable goal(s) please describe the method/measures used to assess the overall effectiveness of the educational program.*

BMP: Resident Message - Stormwater pollution is trash, oil, cigarette butts, & dog waste

Message Description and Distribution Method:

Think Blue Massachusetts "Fowl Water" video (https://www.thinkbluemassachusetts.org/) Advertisement on Facebook & YouTube.

Targeted Audience: Residents

Responsible Department/Parties: Massachusetts Statewide Municipal Stormwater Coalition

Measurable Goal(s):

81,871 social media impressions from residents of Stoughton.

Message Date(s): July 2019

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Resident Message - Stormwater pollution is trash, oil, cigarette butts, & dog waste

Message Description and Distribution Method:

Think Blue Massachusetts "Fowl Water" video (https://www.thinkbluemassachusetts.org/) Advertisement on Facebook & YouTube.

Targeted Audience: Residents

Responsible Department/Parties: Massachusetts Statewide Municipal Stormwater Coalition

Measurable Goal(s):

81,514 social media impressions from residents of Stoughton.

Message Date(s): June 2020

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Annual message - Proper lawn maintenance

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook in the spring encouraging the proper use and disposal of grass clippings and encouraged the proper use of slow-release fertilizers.

Targeted Audience: Businesses, institutions and commercial facilities; Residents

Responsible Department/Parties: Southeastern Regional Stormwater Coalition

Measurable Goal(s):

The Think Blue Massachusetts Facebook account has approximately 300 followers and averages approximately 3,000 reaches per month.

Message Date(s): Nov 1, 2019; April 28 & 30, 2020; May 14 & 22, 2020

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Annual leaf litter message - Leaf litter & brush collection

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook in Fall to encourage proper disposal of leaf litter.

Targeted Audience: Residents

Responsible Department/Parties: Southeastern Regional Stormwater Coalition

Measurable Goal(s):

The Think Blue Massachusetts Facebook account has approximately 300 followers and averages approximately 3,000 reaches per month.

Message Date(s): Sep 26 & 27, 2020; Oct 1, 8, & 11, 2020

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Annual pet waste message - Scoop the Poop

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook in summer to encourage the proper management of pet waste.

Targeted Audience: Residents

Responsible Department/Parties: Southeastern Regional Stormwater Coalition

Measurable Goal(s):

The Think Blue Massachusetts Facebook account has approximately 300 followers and averages approximately 3,000 reaches per month.

Message Date(s): July 17, 2019; Aug 14, 2019; April 9, 14, & 16, 2020; May 13, 18, 28 & 29, 2020; June 2, 2020

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Annual septic maintenance message

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook regarding Septic Smart week to provide information to owners of septic systems about proper maintenance.

Targeted Audience: Residents

Responsible Department/Parties: Southeastern Regional Stormwater Coalition

Measurable Goal(s):

The Think Blue Massachusetts Facebook account has approximately 300 followers and averages approximately 3,000 reaches per month.

Message Date(s): September 16, 2019

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Annual winter deicing/salt message

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook regarding road salt application for residential, commercial, & industrial site owners on the proper storage and application rates of winter deicing material

Targeted Audience: Businesses, institutions and commercial facilities; Industrial; Residential

Responsible Department/Parties: Southeastern Regional Stormwater Coalition

Measurable Goal(s):

The Think Blue Massachusetts Facebook account has approximately 300 followers and averages approximately 3,000 reaches per month.

Message Date(s): Nov 14, 2019; Dec 5, 9, 13, 17, 18, 16, & 24, 2019; Jan 7, 2020

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Maintain Educational Website

Message Description and Distribution Method:

Town website provides hyperlinks to a comprehensive educational website to serve the Neponset Stormwater Partnership service area as a primary resource for key information for all four target audiences.

Targeted Audience: Residents, Businesses, Industry, and Developers

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

This year, there were 3,562 site visitors and 5,614 unique page views.

Message Date(s): Ongoing since May 1, 2018

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Operate Stormwater Hotline

Message Description and Distribution Method:

Operated a regional “stormwater hotline” to field questions and problem reports regarding stormwater from across the region. Responses were collected via a website form hosted at yourcleanwater.org, via email submissions to stormwater@neponset.org, and phone calls to 781-575-0354 x 300. Responses included answers to questions, additional information or follow up investigation, and/or referral of inquiries/reports to the appropriate municipalities as appropriate. Anonymity of inquiries was maintained as requested.

Targeted Audience: Residents, Businesses, Industry, and Developers

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

Provided immediate answers to inquiries generated by regionalized outreach activities.

Message Date(s): Ongoing since May 1, 2018

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Distribute Pet Waste Information With Dog Licenses

Message Description and Distribution Method:

Educational “rack cards” regarding proper pet waste disposal were printed and provided to Town Clerk's office to include with dog license renewal requests, either in person or via mail. The number of rack cards distributed correlated to the number of dogs licensed in Town to ensure all dog owners received the message.

Targeted Audience: Residents

Responsible Department/Parties: Town Clerk, Neponset Stormwater Partnership

Measurable Goal(s):

Over the 5-year permit period achieve a reduction in the number of pet waste bags found when cleaning catch basins. Estimated that 87% of dog owners reached.

Message Date(s): Ongoing throughout 2020

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Summer Pet Waste Campaign

Message Description and Distribution Method:

Rack cards were placed for visitors in Town Hall, the Council on Aging/Youth Commission office, and the Town library. A PDF copy of the flyer was also posted on the Town's Engineering Department website. Materials concerning this issue were also added to the "Stormwater Development Package" for developers and builders. Social media posts were also shared on Stoughton Recreation's Facebook account

Targeted Audience: Residents, Businesses, Industry, and Developers

Responsible Department/Parties: Engineering Dept., Recreation Dept., Neponset Stormwater Partnership

Measurable Goal(s):

A total of 8,996 people in the NSP region were reached through Facebook, with an additional 4,462 people reached through Twitter. Many more Stoughton residents reached via flyers.

Message Date(s): August 15-21, 2019

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Fall Leaf Waste Campaign

Message Description and Distribution Method:

Flyers regarding proper disposal of leaf waste were posted at Town Hall, the Library, and the Council on Aging office. The flyer was also digitally posted to the town's website and the social media messages were shared on the Stoughton Recreation Facebook page.

Targeted Audience: Residents, Businesses, Industry

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

The NSP four social media posts (two on Facebook and two on Twitter) reached a total of 16,408 people through Facebook and 6,378 people through Twitter. Many more Stoughton residents reached via flyers.

Message Date(s): October 10, 2019 and October 24, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Spring Fertilizer and Grass Clipping Campaign

Message Description and Distribution Method:

The social media message regarding proper use (or abstention from use) of fertilizer was shared on the Stoughton DPW and Stoughton Recreation Facebook pages. Links to the pertinent NSP web pages were added to the "Stormwater Resources" section of the Town's website.

Targeted Audience: Residents, Businesses, Industry

Responsible Department/Parties: DPW, Recreation Dept., Neponset Stormwater Partnership

Measurable Goal(s):

The NSP four social media posts (two on Facebook and two on Twitter) reached a total of 16,408 people through Facebook and 6,378 people through Twitter.

Message Date(s): October 10, 2019 and October 24, 2019

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Spring Fertilizer and Grass Clipping Campaign

Message Description and Distribution Method:

The social media message regarding proper use (or abstention from use) of fertilizer was shared on the Stoughton DPW and Stoughton Recreation Facebook pages. Links to the pertinent NSP web pages were added to the "Stormwater Resources" section of the Town's website

Targeted Audience: Residents, Businesses, Industry

Responsible Department/Parties: DPW, Recreation Dept., Neponset Stormwater Partnership

Measurable Goal(s):

A total of 4,704 people were reached through Facebook, with an additional 3,132 people reached through Twitter.

Message Date(s): April 23, 2020

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Paid Facebook Advertising

Message Description and Distribution Method:

A Facebook advertising campaign mimicking one of the regular social media outreach campaigns was piloted tested. Facebook ads regarding proper fertilizer use were designed for Stoughton. These ads were nearly identical to the educational posts designed as part of the Spring outreach activity. The ads were set up to be shown to pertinent groups in Stoughton. Results of the pilot test's reach were then compared to the reach of the previous social media post on the same topic to determine if Facebook ads are a viable option for future outreach.

Targeted Audience: Residents

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

The ad ran for 12 days reached approximately 61,776 people, compared to the original social media post that reached 4,704 people. The ad also generated 1,229 clicks through to the NSP's fertilizer and yard waste management page. It was determined that Facebook ads were a useful tool for outreach and may be used in conjunction with the regular outreach campaigns in the future.

Message Date(s): June 19 – June 30, 2020

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: School Outreach Program

Message Description and Distribution Method:

Prepared a hands-on watershed education curriculum for 4th or 5th grade students. Curriculum covered drinking water and stormwater infrastructure, local water resources, wastewater systems, water conservation, and stormwater pollution prevention techniques, and incorporated slides, videos, models, and hands-on activities. Curriculum was designed and adapted with input from teachers in participating schools and aligned with the MA 5th grade science curriculum standards. The program was delivered at the individual classroom level over the course of two 60-minute visits by a watershed educator. The educator also provided students with a water use / pollution prevention checklist and summary of the program for students to take home and review with their families. Due to the spring 2020 COVID restrictions, schools were shut down and some scheduled school visits during this period could not occur. In lieu of these visits, the educator created digital materials for teachers to use in their virtual classrooms.

Targeted Audience: Residents

Responsible Department/Parties: Stoughton Public Schools, Neponset Stormwater Partnership

Measurable Goal(s):

During the 2019-2020 school year, a total of 149 classrooms in the NSP region were visited twice, representing 79% of total 4th or 5th grade classrooms in the participating communities and an estimated 2,000 families. The COVID pandemic and subsequent school shut down prevented educators from completing all visits as scheduled. Online materials were viewed over 400 times for use in virtual learning situations. Feedback from teachers has been positive on both the in-class presentation and the online materials.

Message Date(s): September 2019 through June 2020 (school year)

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Regional Education Mailing

Message Description and Distribution Method:

An educational mailing was prepared and mailed to all addresses in Stoughton. The mailing was an 11x17 tri-fold brochure that highlighted general stormwater pollution prevention tips. The mail piece referenced key information on fertilizer, pet waste, yard waste, and litter and referred readers to additional information available at yourcleanwater.org and the stormwater hotline. The mailing was distributed to all business and residential addresses Town.

Targeted Audience: Residents and Businesses

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

100% of addresses in the target area were reached, including all businesses, residential addresses, and PO Boxes.

Message Date(s): June 5, 2020

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

BMP: Outreach to Septic System Owners

Message Description and Distribution Method:

An educational mailing was prepared and mailed to all addresses in Stoughton. The mailing was an 11x17 tri-fold brochure that highlighted general stormwater pollution prevention tips. The mail piece referenced key information on fertilizer, pet waste, yard waste, and litter and referred readers to additional information available at yourcleanwater.org and the stormwater hotline. The mailing was distributed to all business and

residential addresses Town.

Targeted Audience: Residents, Businesses, Industry

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

These methods reached 100% of the known septic systems in Town.

Message Date(s): March 2020

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

Describe the opportunity provided for public involvement in the development of the Stormwater Management Program (SWMP) **during this reporting period**:

Annual review of the Stormwater Management Plan; posting of plan on website and annual public comment.

Was this opportunity different than what was proposed in your NOI? Yes ○ No ◉

Describe any other public involvement or participation opportunities conducted **during this reporting period**:

MA Statewide Municipal Stormwater Coalition (Statewide Coalition). Think Blue MA public awareness campaign and regional collaboration on stormwater at the following public events: Metrowest/495 Partnership, Metrowest stormwater roundtable hosted by MWRC of MAPC, MMA meeting & trade show, New England Water Environment Association annual conference, MACC annual conference, MA congress of Lake and Pond associations annual workshop, New England public works association spring conference, Ecotarium Earth Day, New England Water Environment Association spring meeting.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Check off the box below if the statement is true.

☐ This SSO section is NOT applicable because we DO NOT have sanitary sewer

*Below, report on the number of SSOs identified in the MS4 system and removed **during this reporting period**.*

Number of SSOs identified: 0

Number of SSOs removed: 0

MS4 System Mapping

Below, check all that apply.

The following elements of the Phase I map have been completed:

☒ Outfalls and receiving waters

☒ Open channel conveyances

☒ Interconnections

☒ Municipally-owned stormwater treatment structures

☒ Waterbodies identified by name and indication of all use impairments

☒ Initial catchment delineations

Optional: Describe any additional progress you made on your map during this reporting period or provide additional status information regarding your map:

Phase I mapping had been drafted and will be updated throughout Year 3

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses.

◉ The outfall screening data is attached to the email submission

○ The outfall screening data can be found at the following website:

*Below, report on the number of outfalls/interconnections screened **during this reporting period**.*

Number of outfalls screened: 58

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- ○ The catchment investigation data is attached to the email submission
- ○ The catchment investigation data can be found at the following website:

*Below, report on the number of catchment investigations completed **during this reporting period**.*

Number of catchment investigations completed this reporting period: 0

*Below, report on the percent of catchments investigated **to date.***

Percent of total catchments investigated: 0

Optional: Provide any additional information for clarity regarding the catchment investigations below:

IDDE Progress

If illicit discharges were found, please submit a document describing work conducted over this reporting period, and cumulative to date, including location source; description of the discharge; method of discovery; date of discovery; and date of elimination, mitigation, or enforcement OR planned corrective measures and schedule of removal.

- ○ The illicit discharge removal report is attached to the email submission
- ○ The illicit discharge removal report can be found at the following website:

*Below, report on the number of illicit discharges identified and removed, along with the volume of sewage removed **during this reporting period.***

Number of illicit discharges identified: 0

Number of illicit discharges removed: 0

Estimated volume of sewage removed: 0 gallons/day

*Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed **since the effective date of the permit (July 1, 2018)**.*

Total number of illicit discharges identified: 0

Total number of illicit discharges removed: 0

Optional: Provide any additional information for clarity regarding illicit discharges identified, removed, or planned to be removed below:

Employee Training

Describe the frequency and type of employee training conducted **during the reporting period**:

IDDE Training Workshop video hosted by Central Massachusetts Regional Stormwater Coalition (CMRSWC)

MCM4: Construction Site Stormwater Runoff Control

*Below, report on the construction site plan reviews, inspections, and enforcement actions completed **during this reporting period**.*

Number of site plan reviews completed: 3

Number of inspections completed: 473

Number of enforcement actions taken: 0

Optional: Enter any additional information relevant to construction site plan reviews, inspections, and enforcement actions:

N/A

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

Ordinance or Regulatory Mechanism

Below, select the option that describes your ordinance or regulatory mechanism progress.

- (•) Bylaw, ordinance, or regulations are updated and adopted consistent with permit requirements
- ( ) Bylaw, ordinance, or regulations are updated consistent with permit requirements but are not yet adopted
- ( ) Bylaw, ordinance, or regulations have not been updated or adopted

As-built Drawings

Describe the measures the MS4 has utilized to require the submission of as-built drawings and ensure long term operation and maintenance of completed construction sites:

As-built drawings are required for all new construction (residential and commercial). Operation and Maintenance Plans are required for all commercial site plans. The O&M Plans are required to be recorded at

the Registry of Deeds to ensure the Maintenance is know to current and future owners and enforcement can be implemented by the Town if necessary.

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

The Town plans to address this requirement in Year 4.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

The Town plans to address this requirement in Year 4.

Retrofit Properties Inventory

Describe the status of the inventory, due in year 4 of the permit term, of permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas and report on any properties that have been modified or retrofitted:

The Town has begun to develop a list of potential sites that can be modified or retrofitted, and will finalize the list over Years 3 and 4.

MCM6: Good Housekeeping

Catch Basin Cleaning

*Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins **during this reporting period**.*

Number of catch basins inspected: 980

Number of catch basins cleaned: 980

Total volume or mass of material removed from all catch basins: 11,930 cubic yards

Below, report on the total number of catch basins in the MS4 system.

Total number of catch basins: 3,167

If applicable:

Report on the actions taken if a catch basin sump is more than 50% full during two consecutive routine inspections/cleaning events:

N/A

Street Sweeping

*Report on street sweeping completed **during this reporting period** using one of the three metrics below.*

- ◉ Number of miles cleaned: 112
- ○ Volume of material removed: 222 cubic yards
- ○ Weight of material removed: 300 tons

O&M Procedures and Inventory of Permittee-Owned Properties

Below, check all that apply.

The following permittee-owned properties have been inventoried:

- ☒ Parks and open spaces
- ☒ Buildings and facilities
- ☒ Vehicles and equipment

The following O&M procedures for permittee-owned properties have been completed:

- ☒ Parks and open spaces
- ☒ Buildings and facilities
- ☒ Vehicles and equipment

Stormwater Pollution Prevention Plan (SWPPP)

*Below, report on the number of site inspections for facilities that require a SWPPP completed **during this reporting period**.*

Number of site inspections completed: 1

Describe any corrective actions taken at a facility with a SWPPP:

N/A

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- ○ Not applicable
- ○ The results from additional reports or studies are attached to the email submission
- ○ The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

Additional Information

Optional: Enter any additional information relevant to your stormwater management program implementation during the reporting period. Include any BMP modifications made by the MS4 if not already discussed above:

COVID-19 Impacts

Optional: If any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Due to limitations caused by COVID-19, Phase I mapping could not be completed during this reporting period. It will be completed in Year 3

Due to limitations caused by COVID-19, employee training could not be completed during this reporting period. In early Year 3, Stoughton employees shall be shown a IDDE Training Workshop video provided by the CMRSWC.

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 3 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

- Inspect all outfalls/ interconnections (excluding Problem and Excluded outfalls) for the presence of dry weather flow
- Complete follow-up ranking as dry weather screening becomes available

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all uncurbed streets at least annually
- Continue investigations of catchments associated with Problem Outfalls
- Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary

Provide any additional details on activities planned for permit year 3 below:

Part V: Certification of Small MS4 Annual Report 2020

40 CFR 144.32(d) 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 gather and evaluate 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, I certify that 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.

Name: Robin Glynn Title: Town Manager

Signature: Date: 9/23/20

[Signatory may be a duly authorized representative]

Year 3 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2020-June 30, 2021

Please DO NOT attach any documents to this form. Instead, attach all requested documents to an email when submitting the form

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed. Please ONLY report on activities between July 1, 2020 and June 30, 2021 unless otherwise requested.

Part I: Contact Information

Name of Municipality or Organization: Town of Stoughton

EPA NPDES Permit Number: MAR041063

Primary MS4 Program Manager Contact Information

Name: Marc J. Tisdelle, P.E. Title: Executive Director of Development Services/

Street Address Line 1: Town Hall

Street Address Line 2: 10 Pearl Street, 2nd floor

City: Stoughton State: MA Zip Code: 02072

Email: mtisdelle@stoughton-ma.gov Phone Number: (781) 341-1300

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.stoughton.org/sites/g/files/vyhlif3866/f/uploads/stoughton_swmp_report_-_6-20-19_-_public_comment_signed.pdf

Date SWMP was Last Updated: September 2021

If the SWMP is not available on the web please provide the physical address:

N/A

Part II: Self-Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4. Make sure you are referring to the most recent EPA approved Section 303(d) Impaired Waters List which can be found here: https://www.epa.gov/tmdl/region-1-impaired-waters-and-303d-lists-state

Impairment(s)

☒ Bacteria/Pathogens ☐ Chloride ☒ Nitrogen ☒ Phosphorus
☒ Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State: ☐ Assabet River Phosphorus ☒ Bacteria and Pathogen ☐ Cape Cod Nitrogen
☐ Charles River Watershed Phosphorus ☐ Lake and Pond Phosphorus

Out of State: ☐ Bacteria/Pathogens ☐ Metals ☐ Nitrogen ☐ Phosphorus

Clear Impairments and TMDLs

Next, check off all requirements below that have been completed. ***By checking each box you are certifying that you have completed that permit requirement fully.*** *If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.*

Year 3 Requirements

- ☒ Inspected and screened all outfalls/interconnections (excluding Problem and Excluded outfalls)
- ☒ Updated outfall/interconnection priority ranking based on the information collected during the dry weather inspections as necessary
- ☒ Post-construction bylaw, ordinance, or other regulatory mechanism was updated and adopted consistent with permit requirements

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Stormwater Bylaw updated at Town Meeting. Regulations drafted an awaiting approval by the Select Board.

Annual Requirements

- ☒ Provided an opportunity for public participation in review and implementation of SWMP and complied with State Public Notice requirements
- ☒ Kept records relating to the permit available for 5 years and made available to the public
- ☒ The SSO inventory has been updated, including the status of mitigation and corrective measures implemented
  - ○ This is not applicable because we do not have sanitary sewer
  - ◉ This is not applicable because we did not find any new SSOs

- ○ The updated SSO inventory is attached to the email submission
- ○ The updated SSO inventory can be found at the following website:

N/A

- ☒ Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters
- ☐ Provided training to employees involved in IDDE program within the reporting period
- ☒ All curbed roadways were swept at least once within the reporting period
- ☒ Updated system map due in year 2 as necessary
- ☒ Enclosed all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- ☒ Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- ☒ Updated inventory of all permittee owned facilities as necessary
- ☒ O&M programs for all permittee owned facilities have been completed and updated as necessary
- ☒ Implemented all maintenance procedures for permittee owned facilities in accordance with O&M programs
- ☒ Implemented program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- ☒ Inspected all permittee owned treatment structures (excluding catch basins)

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above annual requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Annual IDDE training was delayed due to COVID-19. It was completed in September 2021. Priority ranking table was completed in August 2021.

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- ☒ Annual message was distributed encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- ☒ Permittee or its agents disseminated educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- ☒ Provided information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

N/A

Nitrogen (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

☒ Distributed an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers

☒ Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate

☒ Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increased street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

☐ Any structural BMPs listed in Table 3 of Attachment 1 to Appendix H already existing or installed in the regulated area by the permittee or its agents was tracked and the nitrogen removal by the BMP was estimated consistent with Attachment 1 to Appendix H. The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated nitrogen removed in mass per year by the BMP were documented.

- ○ The BMP information is attached to the email submission
- ○ The BMP information can be found at the following website:

N/A

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

The Town of Stoughton has installed Low Impact Development Stormwater Best Management practices including at the Dawe School and the Plain Street Water Treatment Plant. Nitrogen removal estimates were not calculated.

Phosphorus (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

☒ Distributed an annual message in the spring (April/May) encouraging the proper use and disposal of grass clippings and encouraging the proper use of slow-release and phosphorus-free fertilizers

☒ Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate

☒ Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

** Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)*

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increased street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

☐ Any structural BMPs already existing or installed in the regulated area by the permittee or its agents was tracked and the phosphorus removal by the BMP was estimated consistent with Attachment 3 to Appendix F. The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP were documented.

- ○ The BMP information is attached to the email submission
- ○ The BMP information can be found at the following website:

N/A

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

The Town of Stoughton has installed Low Impact Development Stormwater Best Management practices including at the Dawe School and the Plain Street Water Treatment Plant. Phosphorus removal estimates were not calculated.

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

☒ Increased street sweeping frequency of all municipal owned streets and parking lots to a schedule that targets areas with potential for high pollutant loads

☒ Prioritized inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full; Cleaned catch basins more frequently if inspection and maintenance activities indicated excessive sediment or debris loadings

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

The Town of Stoughton cleans all catch basins annually. There are approximately 20 areas in Town that are prioritized for catch basin cleaning because they collect increased amounts of sediment.

Optional: Use the box below to provide any additional information you would like to share as part of your self-assessment:

The Town of Stoughton has established an Asset Management system to track catch basin cleanings. This has

proven to be a very effective tool to manage the maintenance of their Stormwater Management System.

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

- (●) Yes
- ( ) No

If yes, describe below, including any relevant impairments or TMDLs:

During field activities in Year 3, 11 outfalls were determined to not be MS4 outfalls. The new outfall count for Stoughton is 123 outfalls.

A segment of the Beaver Meadow Brook (MA73-20) is impaired for E. Coli and Dissolved Oxygen (the E. Coli impairment was inventoried in the updated 2016 Integrated List of Waters).

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed **during this reporting period**: 9

*Below, report on the educational messages completed **during this reporting period**. For the measurable goal(s) please describe the method/measures used to assess the overall effectiveness of the educational program.*

BMP: Resident Message - Proper Yard Waste Disposal

Message Description and Distribution Method:

Town of Stoughton website posted a flyer in Fall 2020 from the Neponset Stormwater Partnership (NSP) to encourage proper disposal of yard waste in Stoughton.

Targeted Audience: Residents

Responsible Department/Parties: Neponset Stormwater Partnership

Measurable Goal(s):

Distributed in accordance with the Town of Stoughton's nitrogen and phosphorus impairment requirements.

Message Date(s): Fall 2020

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Resident Message - Proper Lawn Fertilizer Application

Message Description and Distribution Method:

Town of Stoughton website posted a flyer in Spring 2021 from the Neponset Stormwater Partnership to encourage proper application of lawn fertilizers and communicate water quality issues associated with excessive nitrogen and phosphorus input.

Targeted Audience: Residents

Responsible Department/Parties: Neponset Stormwater Partnership

Measurable Goal(s):

Distributed in accordance with the Town of Stoughton's nitrogen and phosphorus impairment requirements.

Message Date(s): Spring 2021

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Summer Pet Waste Campaign

Message Description and Distribution Method:

Neponset Stormwater Partnership shared posts on Facebook and Twitter directed at proper disposal of pet waste. These social media messages were shared on the Stoughton Public Works, Stoughton Town Manager and Stoughton Recreation Facebook pages.

Targeted Audience: Residents, Businesses, Industry

Responsible Department/Parties: Neponset Stormwater Partnership (NSP)

Measurable Goal(s):

Participation by 100% of NSP communities and reach to at least 1,000 people in the NSP region through social media.

Distributed in accordance with the Town of Stoughton's bacteria and pathogens TMDL and impairment and nitrogen and phosphorus impairment requirements.

Message Date(s): 7/2/20, 7/6/20

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Regional Education Mailing

Message Description and Distribution Method:

An educational mailing was prepared and mailed to all addresses in participating NSP communities. The mailing was an 11X17 trifold brochure that highlighted general stormwater pollution prevention tips. The mail piece referenced key information on fertilizer, lawn maintenance, methods to reduce stormwater runoff, and referred readers to additional information available at yourcleanwater.org and the stormwater hotline. The mailing was distributed to all business and residential addresses in Stoughton.

Targeted Audience: Residents, Businesses

Responsible Department/Parties: Neponset Stormwater Partnership

Measurable Goal(s):

Reach 100% of addresses in participating towns, including those who do not use social media or follow town government communication channels.

Message Date(s): 6/28/21

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Septic System Message

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on their Facebook page regarding Septic Smart week to provide information to owners of septic systems about proper septic system maintenance.

Targeted Audience: Residents

Responsible Department/Parties: Think Blue Massachusetts

Measurable Goal(s):

Distributed in accordance with the Town of Stoughton's bacteria and pathogens TMDL and impairment requirements.

Message Date(s): 9/16/20

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Winter Proper Salt Use Method

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on their Facebook page regarding the proper storage and application rates of winter deicing material.

Targeted Audience: Residents

Responsible Department/Parties: Think Blue Massachusetts

Measurable Goal(s):

Distribute two messages to each targeted audience during the permit term.

Message Date(s): 1/11/21

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ◉ No ○

If yes, describe why the change was made:

This outreach was developed by Think Blue Massachusetts to supplement outreach already listed on Stoughton's NOI.

BMP: Maintain Educational Website

Message Description and Distribution Method:

Town website provides hyperlinks to Yourcleanwater.org to serve the Neponset Stormwater Partnership service area as a primary resource for key information for all four target audiences.

Targeted Audience: Residents, Businesses, Industry, and Developers

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

Distribute two messages to each targeted audience during the permit term.

Message Date(s): Ongoing since May 1, 2018

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Operate Stormwater Hotline

Message Description and Distribution Method:

Operated a regional “stormwater hotline” to field questions and problem reports regarding stormwater from across the region. Responses were collected via a website form hosted at yourcleanwater.org, via email submissions to stormwater@neponset.org and phone calls to 781-575-0354 x 300. Responses included answers to questions, additional information or follow up investigation, and/or referral of inquiries/reports to the appropriate municipalities as appropriate. Anonymity of inquiries was maintained as requested.

Targeted Audience: Residents, Businesses, Industry, and Developers

Responsible Department/Parties: DPW, Neponset Stormwater Partnership

Measurable Goal(s):

Provided immediate answers to inquiries generated by regional outreach activities.

Message Date(s): Ongoing since May 1, 2018

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

BMP: Distribute Pet Waste Information With Dog Licenses

Message Description and Distribution Method:

Educational “rack cards” regarding proper pet waste disposal were printed and provided to Town Clerk's office to include with dog license renewal requests, either in person or via mail. The number of rack cards distributed correlated to the number of dogs licensed in Town to ensure all dog owners received the message.

Targeted Audience: Residents

Responsible Department/Parties: Town Clerk, Neponset Stormwater Partnership

Measurable Goal(s):

Over the permit period achieve a reduction in the number of pet waste bags found when cleaning catch basins. Estimated that 87% of dog owners reached.

Distributed in accordance with the Town of Stoughton's bacteria and pathogens TMDL and impairment requirements.

Message Date(s): Ongoing

Message Completed for: Appendix F Requirements ☒ Appendix H Requirements ☒

Was this message different than what was proposed in your NOI? Yes ○ No ◉

If yes, describe why the change was made:

N/A

Add an Educational Message

MCM2: Public Participation

Describe the opportunity provided for public involvement in the development of the Stormwater Management Program (SWMP) **during this reporting period**:

Annual review of the Stormwater Management Plan; posting of plan on website and annual public comment.

Was this opportunity different than what was proposed in your NOI? Yes ○ No ◉

Describe any other public involvement or participation opportunities conducted **during this reporting period**:

Neponset River Watershed Association ran a "Watershed Wednesday" series of presentations to share water quality results, challenges to the watershed, and other educational information.

The Neponset River Watershed Association hosts various clean-up days and citizen science programs throughout the year (September 28th, 2020 and April 17th, 2021.)

The Neponset River Watershed Association organized a public presentation on data from the 2020 Volunteer Water Quality Monitoring Program. The presentation covered the results from the 2020 sampling season and how they fit into the broader context of long-term water quality trends in the watershed. Also discussed were remaining challenges facing various waterways in the Watershed, and actions individuals can take to address those challenges.

MA Statewide Municipal Stormwater Coalition (Statewide Coalition). Think Blue MA public awareness campaign and regional collaboration on stormwater at the following public events: Metrowest/495 Partnership, Metrowest stormwater round-table hosted by MWRC of MAPC, MMA meeting & trade show, New England Water Environment Association annual conference, MACC annual conference, MA congress of Lake and Pond associations annual workshop, New England public works association spring conference, Ecotarium Earth Day, New England Water Environment Association spring meeting.

A presentation on Stormwater was given to the O'Donnell Middle School students in January, 2021.

The Town of Stoughton held a hazardous waste collection day on November 7, 2020.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Check off the box below if the statement is true.

☐ This SSO section is NOT applicable because we DO NOT have sanitary sewer

*Below, report on the number of SSOs identified in the MS4 system and removed **during this reporting period**.*

Number of SSOs identified: 0

Number of SSOs removed: 0

MS4 System Mapping

Optional: Provide additional status information regarding your map:

Stoughton mapping is ahead of schedule. Town maintains an Asset Management/GIS system that includes catch basins, manholes, piping, etc. Preliminary catchment areas have been delineated. Sanitary sewer lines have been mapped.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses. Please also include the updated inventory and ranking of outfalls/interconnections based on monitoring results.

- ○ No outfalls were inspected
- ◉ The outfall screening data is attached to the email submission
- ○ The outfall screening data can be found at the following website:

N/A

*Below, report on the number of outfalls/interconnections screened **during this reporting period**.*

Number of outfalls screened: 69

*Below, report on the percent of outfalls/interconnections screened **to date**.*

Percent of outfalls screened: 100

Optional: Provide additional information regarding your outfall/interconnection screening:

N/A

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- ◉ No catchment investigations were conducted
- ○ The catchment investigation data is attached to the email submission
- ○ The catchment investigation data can be found at the following website:

N/A

*Below, report on the number of catchment investigations completed **during this reporting period**.*

Number of catchment investigations completed this reporting period: 0

*Below, report on the percent of catchments investigated **to date.***

Percent of total catchments investigated: 0

Optional: Provide any additional information for clarity regarding the catchment investigations below:

N/A

IDDE Progress

If illicit discharges were found, please submit a document describing work conducted over this reporting period, and cumulative to date, including location source; description of the discharge; method of discovery; date of discovery; and date of elimination, mitigation, or enforcement OR planned corrective measures and schedule of removal.

- (●) No illicit discharges were found
- ( ) The illicit discharge removal report is attached to the email submission
- ( ) The illicit discharge removal report can be found at the following website:

  N/A

*Below, report on the number of illicit discharges identified and removed, along with the volume of sewage removed **during this reporting period.***

Number of illicit discharges identified: 0

Number of illicit discharges removed: 0

Estimated volume of sewage removed: 0 gallons/day

*Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed **since the effective date of the permit (July 1, 2018)**.*

Total number of illicit discharges identified: 0

Total number of illicit discharges removed: 0

Optional: Provide any additional information for clarity regarding illicit discharges identified, removed, or planned to be removed below:

The Town of Stoughton has a well established sanitary sewer lining program. In Year 3, the Town of Stoughton repaired a leaking sanitary sewer line in Ethyl Way in the Knollsbrook condominium complex.

Employee Training

Describe the frequency and type of employee training conducted **during this reporting period**:

Employee training was delayed due to COVID-19. It was completed in September 2021.

MCM4: Construction Site Stormwater Runoff Control

*Below, report on the construction site plan reviews, inspections, and enforcement actions completed **during this reporting period**.*

Number of site plan reviews completed: 31

Number of inspections completed: 99

Number of enforcement actions taken: 0

Optional: Enter any additional information relevant to construction site plan reviews, inspections, and enforcement actions:

The Town of Stoughton Engineering Department and Conservation office performs regular inspections of construction sites including the review of erosion and sedimentation control measures. Although no enforcement orders were issues, any items requiring attention by the owner or contractor are regularly communicated and addressed. Copies of all site inspections are kept within the Town's Asset Management system.

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

As-built Drawings

*Below, report on the number of as-built drawings received **during this reporting period**.*

Number of as-built drawings received: 20

Optional: Enter any additional information relevant to the submission of as-built drawings:

N/A

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

The Town of Stoughton hired an Engineering Consulting Firm to complete this assessment. This assessment will be completed during Year 4.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

The Town of Stoughton hired an Engineering Consulting Firm to complete this assessment. This assessment will be completed during Year 4.

Retrofit Properties Inventory

Describe the status of the inventory, due in year 4 of the permit term, of permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas and report on any properties that have been modified or retrofitted:

The Town of Stoughton hired an Engineering Consulting Firm to complete this assessment. This assessment will be completed during Year 4.

MCM6: Good Housekeeping

Catch Basin Cleaning

*Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins **during this reporting period**.*

Number of catch basins inspected: 301

Number of catch basins cleaned: 1,793

Total volume or mass of material removed from all catch basins: 570.41 tons

Below, report on the total number of catch basins in the MS4 system.

Total number of catch basins: 3,167

If applicable:

Report on the actions taken if a catch basin sump is more than 50% full during two consecutive routine inspections/cleaning events:

As described above, areas that collect increased amounts of sediment are prioritized for street and catch basin cleaning.

Street Sweeping

*Report on street sweeping completed **during this reporting period** using one of the three metrics below.*

- ○ Number of miles cleaned: 128
- ○ Volume of material removed: [Select Units]
- ◉ Weight of material removed: 356.54 tons

Stormwater Pollution Prevention Plan (SWPPP)

Below, report on the number of site inspections for facilities that require a SWPPP completed ***during this reporting period****.*

Number of site inspections completed: 0

Describe any corrective actions taken at a facility with a SWPPP:

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- (•) Not applicable
- ( ) The results from additional reports or studies are attached to the email submission
- ( ) The results from additional reports or studies can be found at the following website(s):

N/A

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

N/A

Additional Information

Optional: Enter any additional information relevant to your stormwater management program implementation during the reporting period. Include any BMP modifications made by the MS4 if not already discussed above:

The Town has hired an engineering consulting firm to improve the stormwater design at the Department of Public Works facility including installing a new BMP. This work started in Year 3 and will be ongoing in Year 4.

COVID-19 Impacts

Optional: If any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 4 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

- Develop a report assessing current street design and parking lot guidelines and other local requirements within the municipality that affect the creation of impervious cover
- Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist
- Identify a minimum of 5 permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious areas

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all curbed streets at least annually
- Continue investigations of catchments associated with Problem Outfalls
- Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary
- Review O&M programs for all permittee owned facilities; update if necessary
- Implement all maintenance procedures for permittee owned facilities in accordance with O&M

programs
- Implement program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- Enclose all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- Review as-built drawings for new and redevelopment to ensure compliance with post construction bylaws, regulations, or regulatory mechanism consistent with permit requirements
- Inspect all permittee owned treatment structures (excluding catch basins)

Provide any additional details on activities planned for permit year 4 below:

Catchment investigations will begin in Year 4 of the Permit. Low Impact Development Best Management practices are currently under design for Glen Echo Pond as well as the Capen Reynolds farm. Two infiltration Best Management Practices are under design at the Town's DPW facility to reduce stormwater runoff, increase infiltration, and improve stormwater runoff quality.

Part V: Certification of Small MS4 Annual Report 2021

40 CFR 144.32(d) 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 gather and evaluate 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, I certify that 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.

Name: Title:

Signature: Date:

[Signatory may be a duly authorized representative]

APPENDIX J

Minimum Control Measures BMPs

Town of Stoughton, Massachusetts

MA MS4 General Permit - Control Measures

CM #1 - Public Education and Outreach

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**Distribution of a minimum of two (2) educational messages over the permit term to each of the four (4) required audiences**	Residents (1)	DPW Operations, Engineering	Distribute at least two educational messages within the permit term (including spring cleanup, pet waste, and fall leaf flyers)	2018	July 2019
		Businesses, Institutions, and Commercial Facilities (2)	DPW Operations, Engineering	Distribute stormwater informational handout and construction and erosion control handout as attachments to permit applications		
		Developers (construction) (3)	DPW Operations, Engineering	Distribute stormwater informational handout and construction and erosion control handout as attachments to permit applications		
		Industrial Facilities (4)	DPW Operations, Engineering	Distribute mailings to industrial properties two times over permit term		
1A	School Curricula/Programs	Classroom Education	Engineering	Stormwater Presentation to Middle and High Schools	2018	N/A

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Control Measures

CM #2 - Public Involvement and Participation

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**Public Review**	SWMP Review	Engineering	Make SWMP available at least annually for public review	2018	July 2019
R2	**Public Participation**	SWMP Review	Engineering	Allow public to comment on stormwater management plan annually	2018	July 2019
R3	Public Participation	Hotline/webline	DPW Operations, Engineering	Publish contact on stormwater for soliciting complaints and questions	2018	N/A
1A	Public Participation	Stormwater Committee/Task Force	Board of Selectmen	Identify stormwater problem areas and develop corrections plan	2018	N/A
2A	Public Participation	Household Hazardous Waste	Board of Health	Hold household hazardous waste collection day annually	2018	N/A
3A	Public Participation	Neponset River Watershed Association Membership	Engineering	Attend several meetings per year and collaborate with other Towns	2018	N/A
4A	Public Participation	Harris Pond Citizen Committee	Conservation Commission	Form committee to increase awareness and support to restore Harris Pond	2018	N/A
5A	Public Participation	Ames Pond Citizen Committee	Conservation Commission	Form committee to increase awareness and support to restore Ames Long Pond	2018	N/A

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Control Measures

CM #3 - Illicit Discharge Detection and Elimination (IDDE) Program

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**SSO Inventory**	Develop SSO inventory in accordance with permit conditions	DPW Operations	Within 1 year of effective date develop inventory of historical SSOs that occurred within the MS4 in previous 5 Years	2018	July 2019
R2	**Storm Sewer System Map**	Create map and update during IDDE program completion	Engineering	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018	July 2020
R3	**Written IDDE Program Development**	Create written IDDE program	Engineering	Complete within 1 year of the effective date of permit	2018	July 2019
R4	**Implement IDDE Program**	Implement catchment investigations according to program and permit conditions	Engineering	Implement catchment investigations according to program and permit conditions	2018	July 2028
R5	**Employee Training**	Train employees on IDDE implementation	DPW Operations	Train annually	2018	July 2019
R6	**Conduct Dry Weather Screening**	Conduct in accordance with outfall screening procedure and permit conditions	Engineering	Conduct in accordance with outfall screening procedure and permit conditions	2018	July 2021
R6	**Conduct Wet Weather Screening**	Conduct in accordance with outfall screening procedure	Engineering	Conduct in accordance with outfall screening procedure and permit conditions	2018	July 2028
R7	**Ongoing Screening**	Conduct dry weather and wet weather screening as necessary	Engineering	Conduct in accordance with outfall screening procedure and permit conditions	2018	N/A
R8	**IDDE Regulations**	Comply with local bylaws, state and federal requirements	Engineering	Continue to eliminate illicit discharge violations	2018	N/A

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Control Measures

CM #4 - Construction Site Stormwater Runoff Control

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**Site inspection and enforcement of Erosion and Sediment Control (ESC) measures**	Complete written procedures of site inspections and enforcement procedures	Engineering, Conservation Commission, Planning Board, Board of Health	Within 1 year of effective date of the permit, develop written/electronic SOP for inspection/enforcement of ESC measures	2018	July 2019
R2	**Site plan review**	Complete written procedures of site plan review and begin implementation	Engineering, Conservation Commission, Planning Board, Board of Health	Complete within 1 year of the effective date of the permit	2018	July 2019
R3	**Erosion and Sediment Control**	Adoption of requirements for construction operators to implement a sediment and erosion control program	Engineering, Conservation Commission, Planning Board, Board of Health	Complete within 1 year of the effective date of the permit	2018	July 2019
R4	**Waste Control**	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Engineering, Conservation Commission, Planning Board, Board of Health	Complete within 1 year of the effective date of the permit	2018	July 2019
R5	**Construction Ordinance/Bylaw**	Make updated revisions to ESC Bylaw Language	Engineering, Conservation Commission, Planning Board, Board of Health	Continue to implement and enforce construction ordinance and make revisions as necessary	2018	N/A

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Control Measures

CM #5 - Stormwater Management in New Development and Redevelopment

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**As-built plans for on-site stormwater control**	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Engineering, Planning Board, Conservation Commission	Require submission of as-built plans for completed projects	2018	July 2020
R2	**Inventory and priority ranking of MS4-owned properties that may be retrofitted with BMPs**	Conduct detailed inventory of MS4 owned properties and rank for retrofit potential	Engineering, Planning Board, Conservation Commission	Complete 4 years after permit effective date	2018	July 2022
R3	**Allow green infrastructure**	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Engineering, Planning Board, Conservation Commission	Complete 4 years after permit effective date	2018	July 2022
R4	**Street design and parking lot guidelines**	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options	Engineering, Planning Board, Conservation Commission	Complete 4 years after permit effective date	2018	July 2022
R5	**Ensure any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality**	Adoption, amendment or modification of a regulatory mechanism to meet permits requirements	Engineering, Planning Board, Conservation Commission	Complete 2 years after permit effective date	2018	July 2020
1A	Monitoring	Monitor construction impacts on amount of impervious surfaces	Engineering, Planning Board, Conservation Commission	Record pre/post-construction changes to amount of impervious surfaces	2018	N/A
2A	Post-Construction Ordinance/Bylaw	Make updated revisions to Post-Construction Management Bylaw language	Engineering, Planning Board, Conservation Commission	Update bylaw within 2 years of effective permit date	2018	N/A

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Control Measures

CM #6 - Good House Keeping and Pollution Prevention for Permittee Owned Operations

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**O&M procedures**	Create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment	DPW Operations, Engineering	Complete within 2 years after permit effective date	Completed	July 2020
R2	**Inventory all permittee-owned parks and open spaces, buildings and facilities (including their storm drains), and vehicles and equipment**	Create inventory	Faculty Director	Complete 2 years after permit effective date	2018	July 2020
R3	**Infrastructure O&M**	Establish and implement program for repair and rehabilitation of MS4 infrastructure	DPW Operations	Complete 2 years after permit effective date	Completed	July 2020
R4	**Stormwater Pollution Prevention Plan (SWPPP)**	Create Stormwater Pollution Prevention Plan (SWPPP) for maintenance garages, transfer stations and other waste- handling facilities	DPW Operations	Complete 2 years after permit effective date	2018	July 2020
R5	**Catch Basin Cleaning**	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	DPW Operations	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018	July 2020
R6	**Street Sweeping Program**	Sweep all streets and permitee-owned parking lots in accordance with permit conditions	DPW Operations	Sweep all streets and permitee-owned parking lots once per year in the spring	2018	July 2020
R7	**Road Salt use optimization program**	Establish and implement a program to minimize the use of road salt	DPW Operations	Implement salt use optimization during deicing season	2018	July 2020
R8	**Inspections and maintenance of stormwater treatment structures**	Establish and implement inspection and maintenance procedures and frequencies	DPW Operations	Inspect and maintain treatment structures at least annually	2018	July 2020
1A	Norfolk County Mosquito Control Project	Coordinate annual meeting	DPW Operations, Board of Health, Conservation Commission	Contact annually	2018	N/A

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Taunton River Watershed, Neponset River, Unnamed Tributary (MA73-32) - Bacteria and Pathogens

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	Public Education and Outreach	Distribute annual message encouraging the proper management of pet waste	DPW Operations, Board of Health	Annual distribution of educational messages over the permit term (5 years)	2018	July 2019
		Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a bacteria or pathogen impaired waterbody	DPW Operations, Board of Health	Provide septic maintenance information to septic contractors to distribute to residents.	2018	July 2019
R2	Illicit Discharge	Prioritize catchment areas	DPW Operations, Board of Health	Complete within 1 year of the effective date of permit and update as required	2018	July 2019

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Unnamed Tributary (MA73-34) - Phosphorus

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**Public Education and Outreach**	Annual message in spring timeframe that encourages the proper use and disposal of grass clipping and encourages the proper use of slow-release and phosphorus-free fertilizers. Annual message in the summer timeframe encouraging the proper management of per ewaste, including noting any existing ordinances where appropriate. Annual message in the fall timeframe encouraging the proper disposal of leaf litter.	DPW Operations, Board of Health	Distribute required messages each year.	2018	July 2019
R2	**Stormwater Management in New Development and Redevelopment**	Include requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.	DPW Operations, Board of Health	Incorporate phosphorus removal into new stormwater regulations	2018	July 2019
R3	**Good House Keeping and Pollution Prevention for Permittee Owned Operations**	Establish procedures to properly manage grass cutting and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces; increased street sweeping frequency of all municipal owned streets and parking lots to a minimum of two times a year, once in the spring and at least once in the fall.	DPW Operations, Board of Health	Establish procedures for dealing with waste produced on permittee owned properties	2018	July 2019
R4	**Phosphorus Source Identification Report**	Complete a Phosphorus Source Identification Report.	DPW Operations, Board of Health	Complete within 4 years of the permit effective date	2018	July 2022
R5	**Structural BMPs**	Evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under permit part 2.3.6.d.ii or identified in the Phosphorus Source Identification Report that are within the drainage area of the water quality limited water or its tributaries.	DPW Operations, Board of Health	Complete within 5 years of the permit effective date	2018	July 2023

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Taunton River Watershed - Nitrogen

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**Public Education and Outreach**	Residential, Business, Commercial and Institution	Engineering	Distribute required messages each year	2018	July 2019
R2	**Stormwater Management in New Development and Redevelopment**			Incorporate TMDL into new stormwater regulations	2018	July 2019
R3	**Good House Keeping and Pollution Prevention for Permittee Owned Operations**			Establish procedures for dealing with waste produced on permittee owned properties	2018	July 2019
R4	**Nitrogen Source Identification Report**			Complete within 4 years of the permit effective date	2018	July 2022
R5	**Structural BMPs**			Complete within 5 years of the permit effective date	2018	July 2023

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

Town of Stoughton, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Ames Long Pond, Bolivar Pond - Solids, Oil and Grease, or Metals

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation	Required to Complete by
R1	**Stormwater Management in New Development and Redevelopment**	Stormwater management systems designed on commercial and industrial land use areas draining to the water quality limited waterbody shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event.	DPW Operations, Board of Health	Implement BMPs that allow for the prevention of metals being discharged into impaired bodies of water	2018	July 2019
R2	**Good House Keeping and Pollution Prevention for Permittee Owned Operations**	Increase street sweeping frequency of all municipal owned streets and parking lots to a schedule determined by the permittee to target areas with potential for high pollutant loads.	DPW Operations, Board of Health	Increase street sweeping frequency at target areas with potential for high pollutant loads	2018	July 2019
R3		Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full.	DPW Operations, Board of Health	Review catch basin cleaning records annually to prioritize maintenance	2018	July 2019
R4		Each annual report shall include the street sweeping schedule determined by the permittee to target high pollutant loads.	DPW Operations, Board of Health	Include street sweeping schedule in annual report	2018	July 2019

R = Required under Permit
A = Additional Activity beyond Permit Requirements (optional)

APPENDIX K

Operations and Maintenance (O&M) Plan

APPENDIX L

Illicit Discharge Detection and Elimination (IDDE) Plan

ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PLAN

Town of Stoughton

September 2022

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)

"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

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Appendix F – System Vulnerability Factor (SVF) Inventory
Appendix G – New England Interstate Water Pollution Control Commission IDDE Manual
Appendix H – IDDE Employee Training Record

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 2018/2022 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	2592
Unnamed Tributary	MA73-32	5	• Benthic Macroinvertebrates • Escherichia coli	54860
Ames Long Pond	MA62001	5	• Non-Native Aquatic Plants • Aquatic Plants (Macrophytes) • Turbidity • Fanwort	
Steep Hill Brook	MA73-18	5	• Escherichia 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.**

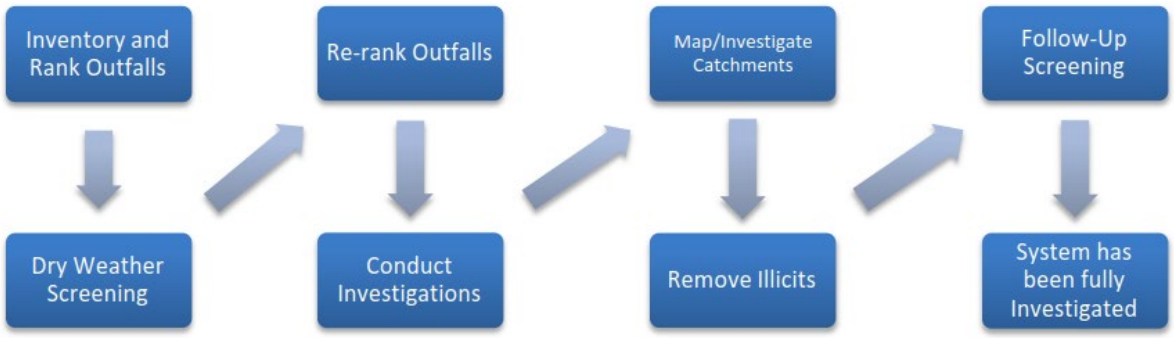

Figure 1-1 IDDE Investigation Procedure Framework

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 Petty
- Conservation Agent – James B. Conlon
- Planning Board – Craig Horsfall (interim)
- Town Manager – Marc J. Tisdelle
- Facilities Director – Paul Giffune
- 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	147
Inlets	105
Uplands Outlet	364

Catch Basins	3,171
Drain Manholes	2,361
Stormwater BMPs	52
Drain Pipes	3,288
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: August 2022

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]
None								

[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 no 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 49 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 98 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,

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
				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
Total Nitrogen (Ammonia + Nitrate/Nitrite, methods are for Nitrate-Nitrite and need to be combined	**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

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
with Ammonia listed above.)				

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 and interconnection rankings based on information gathered during dry weather. No outfall exhibited signs of likely sewer input based on the MS4 Permit definition (described in Section 5.2). Therefore, the Town still has no problem outfalls. The ranking was also revised based on changes to the Town's outfall inventory and the receiving water's impairments. 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 the field investigation, where necessary. The SVF inventory will also be updated based on information obtained during the field investigations, where necessary.

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

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.
- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another

located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all 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;

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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.

RULES & REGULATIONS FOR STORMWATER MANAGEMENT

(Approved by Select Board on October 19, 2021)

UNDER THE GENERAL BYLAWS OF THE TOWN OF STOUGHTON, CHAPTER 159: STORMWATER MANAGEMENT BYLAW

(Stormwater Management Bylaw adopted at 2021 Annual Town Meeting)

1.0 PURPOSE

The purpose of these Regulations is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased construction SITE and POST-DEVELOPMENT stormwater RUNOFF, decreased groundwater RECHARGE, and NONPOINT SOURCE pollution associated with NEW DEVELOPMENT and REDEVELOPMENT, as more specifically addressed in the Stormwater Management Bylaw of the Town of Stoughton.

2.0 DEFINITIONS

Terms defined herein and in the Bylaw are shown in all CAPITAL LETTERS. The definitions contained herein apply to issuance of a STORMWATER PERMIT established by the Town of Stoughton Stormwater Management Bylaw and implemented through these Regulations. Terms not defined in this section, in the Bylaw, or in the Massachusetts Wetlands Regulations shall be construed according to their customary and usual meaning.

The following terms are defined in the Massachusetts Wetlands Regulations (310 CMR 10.00): Cold-water fishery, Critical areas, environmentally sensitive SITE design, Flood control, ground water, Illicit discharge, Land uses with higher potential pollutant loads, LOW IMPACT DEVELOPMENT (LID) TECHNIQUES, Maintenance of a stormwater management system, REDEVELOPMENT, STORMWATER BEST MANAGEMENT PRACTICE, Stormwater management system, Surface waters, and Vernal pool habitat.

The following terms are *in addition to* the terms defined in Chapter 159 of the Stoughton General Bylaw.

FLOODING: A local and temporary inundation or a rise in the surface of a body of water, such that it covers land not usually under water.

IMPAIRED WATERS: According to EPA, Impaired Waters are waterbodies that do not meet one or more of its designated uses(s) in the applicable surface water quality standards. These waterbodies are listed in categories 4 and 5 of the most recent Massachusetts Integrated List of Waters. See the Massachusetts Department of Environmental Protection website for the most recent Integrated List of Waters.

IMPERVIOUS SURFACE or IMPERVIOUS COVER (IC) or IMPERVIOUS AREA (IA): Any material or structure on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, but is not limited to: paved surfaces (parking lots, sidewalks, driveways), roof tops, swimming pools, patios, and paved, gravel and compacted dirt surfaced roads.

INVASIVE SPECIES: Those plant species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health. For the purpose of this bylaw, a plant species is considered “invasive" only when it occurs on the List of Federal Noxious Weeds (available on the U.S. Department of Agriculture Natural Resources Conservation Service website) or on the Massachusetts Prohibited Plant List (available on the Massachusetts Department of Agricultural Resources website).

INFILTRATION: The act of conveying surface water into the ground to permit groundwater RECHARGE and the reduction of stormwater RUNOFF from a project SITE.

MASSACHUSETTS STORMWATER HANDBOOK (HANDBOOK): The Stormwater Handbook, and as amended from time to time, that was produced by MassDEP to be used as guidance for controlling stormwater. Implementation of the STORMWATER MANAGEMENT STANDARDS shall be in accordance with the Stormwater Handbook.

NEW DEVELOPMENT: Any construction or LAND DISTURBANCE on a parcel of land that is currently in a natural vegetated state and does not contain alteration by man-made activities.

OWNER: An individual, firm, association, syndicate, partnership, or corporation having sufficient proprietary interest to seek development of land.

PERSON: Any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or political subdivision thereof to the extent subject to Town Bylaws, codes, administrative agency, public or quasi-public corporation or body, the Town of Stoughton, and any other legal entity, its legal representatives, agents, or assigns.

PRE-DEVELOPMENT: The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Engineering Department. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first plan submission shall establish pre-development conditions.

POST-DEVELOPMENT: The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific SITE or tract of land. Post-development refers to the phase of a NEW DEVELOPMENT or REDEVELOPMENT project after completion of construction, and does not refer to the construction phase of a project.

RECHARGE: The replenishment of underground water reserves.

RESOURCE AREA: Any area protected under, including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Stoughton Wetlands Protection Bylaw.

RUNOFF: Rainfall or snowmelt flowing over the ground surface.

SEDIMENTATION: A process of depositing material that has been suspended and transported in water.

SITE: The parcel of land being developed, or a designated planning area in which the land development project is located.

STOP WORK ORDER: An order issued by the Planning Board or its designee which requires that all construction activity on a site be stopped.

SUBDIVISION: Defined in the Subdivision Control Law of Massachusetts (M.G.L. – Chapter 41, Section 81L Definitions).

TOTAL MAXIMUM DAILY LOAD (TMDL): The greatest amount of a pollutant that a water body can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters for drinking, swimming, recreation, and fishing. A TMDL is implemented by specifying how much of that pollutant can come from point, nonpoint, and natural sources. See section 303(d) of the Clean Water Act and 40 CFR §130.2 and §130.7.

WATER QUALITY VOLUME (WQ_v): The storage volume needed to capture a specified average annual stormwater RUNOFF volume. Numerically (WQv) will vary as a function of drainage area or IMPERVIOUS AREA.

3.0 AUTHORITY

A) The Rules and Regulations contained herein have been adopted by the Select Board in accordance with the Town of Stoughton Stormwater Management Bylaw.

B) Nothing in these Rules and Regulations is intended to replace or be in derogation of the requirements of the Town of Stoughton Zoning Bylaw, Subdivision Rules and Regulations, Wetlands Protection Bylaw, Board of Health Bylaws, or any Rules and Regulations adopted there under.

C) These Stormwater Regulations may be periodically amended by the Select Board in accordance with the procedures outlined in Section 159.5 (B) of the Town of Stoughton Stormwater Management Bylaw.

4.0 ADMINISTRATION

The Select Board is designated as the STORMWATER AUTHORITY under the Stormwater Management Bylaw. The Board shall administer, implement and enforce these Regulations. The Board may designate the Town Engineer or an outside consultant as its designee for the purposes of reviewing all stormwater submittals and conducting inspections described in Section 10.0.

5.0 APPLICABILITY

A) These Stormwater Management Regulations apply to all activities in accordance with the Scope and Applicability of Section 159.4 of the Stormwater Management Bylaw as described in this section. No Town Earth Removal Permit, Order of Conditions from the Conservation Commission, Site Plan approval from the Planning Board, Building Permit, Subdivision approval, Special Permit, variance or finding shall constitute compliance with this bylaw, unless issuance of such permit included review by the Engineering Department or Town Consultants on behalf of the Board of Selectmen relative to the Stormwater Management Bylaw.

Projects and/or activities not specifically under the currently regulated jurisdiction of any of the Town of Stoughton boards, commissions or departments but still within the jurisdiction of the Town of Stoughton Stormwater Management Bylaw must obtain a STORMWATER PERMIT from the Engineering Department in accordance with the permit procedures and requirements defined in Section 6.0 of these Regulations. Projects not requiring regulatory approval from other boards, departments, or commissions will undergo administrative review through the Town of Stoughton Engineering Department.

B) If a portion of a project or activity meets the Scope and Applicability of Section 159.4 of the Stormwater Management Bylaw and it is within the specific jurisdiction of another Town board, then the Select Board will remain the STORMWATER AUTHORITY, responsible for facilitating stormwater review and approval of the STORMWATER PERMIT. The specific application submission requirements, public notices, and fee requirements of the applicable board, commission, and/or department shall remain in effect in addition to the requirements of the Stormwater Management Bylaw. To the extent possible, the Select Board and other Town boards shall coordinate any necessary expert engineering and other consultant services. No SITE ALTERING activity may commence without a STORMWATER PERMIT issued by the Select Board (issued by the Stoughton Engineering Department).

6.0 PERMIT PROCEDURES AND REQUIREMENTS

A) Projects requiring a STORMWATER PERMIT per Section 159.4 of the Stormwater Management Bylaw shall be required to submit the materials as specified in this Section, and are required to meet the Performance Standards: Stormwater and LID Criteria as specified in Section 7.0 of these Regulations.

B) Filing Application

1. The applicant shall file with the approving Board, Commission, and Engineering Department, ten (10) copies and one (1) digital copy in Portable Document Format (PDF) of a completed application package for a STORMWATER PERMIT. While the applicant can be a representative, the permittee must be the OWNER of the SITE or holder of an easement. The Stormwater Management application package shall include:

    a) A completed Application Form with original signatures of all OWNERS;
    b) Stormwater Report to document compliance with the STORMWATER MANAGEMENT STANDARDS and all additional requirements specifically described in these Regulations;
    c) Payment of the application fee; and
    d) Draft Operation & Maintenance Agreement.
    e) Draft Stormwater Pollution Prevention Plan (SWPPP).

C) Filing Fees

1. General. A non-refundable application fee shall be due and payable to the Town of Stoughton at the time an application is filed. The application fee will be used for processing of the application, coordination of Town staff, posting hearings, inspections by Town staff and other expenses connected with the review of the application by Town staff.

2. Rules

    a) Stormwater Permit Application and Review Fees are non-refundable. All fees shall be calculated by the Engineering Department in accordance with the fee schedule in Table 1 below.
    b) These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local Bylaw.
    c) Federal, State, and Municipal projects shall be exempt from Application Fees associated with a STORMWATER PERMIT.
    d) The fee includes two follow-up reviews for plan and document revisions.
    e) The fees denoted below shall not be used to calculate review fees for outside consultants. Additional review fees may be charged to cover outside professional consultant review services for a project if the Town Engineer determines that such services are necessary due to the scope and complexity of the project.
    a) Filing Fees will be deposited into the Stormwater Revolving Fund.

Table 1: Filing Fee Schedule for Stormwater Permits

Application Type	Fee
Disturbance area is 1.0 to 2.0 acres	$1,000
Disturbance area is 2.0 to 5 acres	$1,500
Disturbance area is 5.0 to 10.0 acres	$2,000
Disturbance area of 10.0 acres or more	$2,500

3. Revision of Fee Schedules and Regulations Governing Fees

   a) The Select Board may review and revise its Regulations and fee schedules periodically at its discretion.

   b) Amendments to these Regulations shall be preceded by a posted public hearing of the Select Board not less than 15 days prior to the date upon which the change is to be effective.

   c) A copy of the written decision of revised Regulations and/or fee schedules will be filed with the Town Clerk within 12 business days after final action by the Board is taken.

4. Revolving Fund for consultant Services. The Select Board may, at its discretion, require deposit of funds into a revolving fund in accordance with Chapter 44 Section 53E ½ to pay for peer review of projects. Generally, such projects are more complicated and require extensive review; however, the Board may also consider such peer review upon the recommendation of the Town Engineer. The Select Board will strive to make such reviews concurrent with other permits being sought by the applicant, and not duplicate efforts of peer reviewers.

D) Public Hearings and Meetings

1. For projects or activities within the currently regulated jurisdiction of Town Boards and Commissions (including but not limited to projects requiring Site Plan Review through the Planning Board, Subdivision, Special Permit, or an Order of Conditions through the Conservation Commission), the Engineering Department shall review the STORMWATER PERMIT concurrently with other permits in order to streamline the review process for the applicant.

2. For projects that are not otherwise subject to review by Town Boards and Commissions, a STORMWATER PERMIT application shall be reviewed administratively by the Engineering Department within thirty (30) days of the receipt of a complete application. The Engineering Department may continue its consideration of the application to a further date, in order to receive additional information as deemed necessary. Failure of the Engineering Department to take final action within thirty (30) days shall not result in constructive approval of the application. The BOARD shall be notified of all STORMWATER PERMIT applications that have been received.

E) Plan Changes

The permittee must notify the Engineering Department or its designee in writing of any drainage change or alteration in the system authorized in a STORMWATER PERMIT before any change or alteration is made. If the Engineering Department or its designee determines in writing that the change or alteration is significant, based on the STORMWATER MANAGEMENT STANDARDS, Performance Standards in Section 7.0, and accepted construction practices, the Engineering Department may require that an amended application be filed. A change will be required when 25% of the land area of the previously approved project plans are revised, OR, any changes are made to the stormwater system including any stormwater BMPs.

F) Entry

To the extent permitted by state law, or if authorized by the OWNER or other party in control of the property, Board or its designee, officers, and employees may enter upon privately owned property for the purpose of performing their duties under the Stormwater Management Bylaw and these Regulations 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.

G) Project Completion

At completion of construction of the project, the permittee shall submit as-built record drawings of all structural best management practices required in the STORMWATER PERMIT and an updated Maintenance Agreement noting any changes and new responsible parties. As-built Plans shall be full size plans at a scale approved by the Planning Board that reflect the "as built" conditions, including all final grades, as determined by a Registered Land Surveyor. Topographic information shall be collected for all of the surface stormwater management features including contours of stormwater basins, top of berm elevations, outlet control elevations, etc. All changes to project design shall be bubbled on plans to define changes made or otherwise noted as changes. All work deleted, corrections in elevations, and changes in materials, shall be shown on the as-built drawings. Deviations from the approved plans, if any, shall be certified in writing by a Registered Professional Engineer. As-built plans shall be submitted within two years of the completion of construction projects. The as-built drawings must depict all on site controls, both structural and non-structural, designed to manage stormwater generated by the site. The applicant shall also submit as-built drainage calculations using the information collected by the as-built drawings to insure that the proposed stormwater BMP's have been constructed consistent with the approved design.

Surveyed latitude and longitude position of all structural STORMWATER BEST MANAGEMENT PRACTICES, including drainage structures, conveyances, outfalls, catch basins, curbing and headwalls compatible with Stoughton's Geographic Information System (GIS) shall be submitted digitally to the Engineering Department. Record drawings shall also include a calculation of IMPERVIOUS AREA (IA) and DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) in square feet (ft^2) for pre-

and post-development conditions. Additional requirements for as- built plans are in the Stoughton Subdivision Rules and Regulations.

H) Permit Expiration

If work has not been completed within three (3) years, the Applicant shall notify the Engineering Department. The Board may re-evaluate the originally approved STORMWATER PERMIT to determine whether the plan still satisfies local program requirements. Permits may be extended by the Engineering Department. If the Engineering Department finds the previously filed Plan to be inadequate, a modified plan shall be submitted and approved prior to the commencement or continuation of land- disturbing activities per the procedure in Section 6.0 of these Regulations.

I) Stormwater Report Contents

1. The application for a STORMWATER PERMIT shall include the submittal of a Stormwater Report to the Applicable Board, Commission, or Engineering Department prepared in accordance with the MASSACHUSETTS STORMWATER HANDBOOK and the criteria established in these Regulations. This Stormwater Report shall document compliance with each of the STORMWATER MANAGEMENT STANDARDS as provided in the HANDBOOK as well as the performance standards as described in Section 7.0 and shall contain sufficient information for the Engineering Department to evaluate the environmental impact, effectiveness, and acceptability of the SITE planning process and the measures proposed by the applicant for reducing adverse impacts from stormwater RUNOFF. The Stormwater Report shall remain on file with the Engineering Department.

2. The Stormwater Report shall fully describe the project in drawings, narrative, and calculations. To demonstrate compliance with these Regulations to the Engineering Department, the applicant shall include the following in addition to the Stormwater Report requirements in the HANDBOOK:

   a) Locus Map;
   b) Existing Conditions SITE Plan. Stamped by a Registered Land Surveyor including existing topography, wetlands resources (if any), special flood zones or 100-year flood plain, topography at 1-foot contours, site detail, utilities;
   c) The existing zoning, and land use at the SITE and abutting properties;
   d) A proposed condition SITE Plan including the layout of the project, proposed buildings, parking areas, sidewalks, driveways, etc.;
   e) Description of proposed Low Impact Development and green infrastructure best management practices
   f) The location(s) of existing and proposed easements;
   g) The location of existing and proposed utilities;
   h) The SITE's existing & proposed topography with contours at 1-foot intervals;
   i) The existing SITE stormwater flow patterns including surface flows and any existing subsurface conveyance or RECHARGE facilities);
   j) Information regarding whether the site is located in a watershed that drains

to an impaired water.

k) A written description and delineation of existing stormwater conveyances, impoundments, wetlands, drinking water protection areas, swimming beaches, and other protected RESOURCE AREAs, on or adjacent to the SITE or into which stormwater flows;
l) A delineation of 100-year flood plains, if applicable;
m) The existing and proposed vegetation and ground surfaces with RUNOFF coefficients for each; (including all IMPERVIOUS COVER – parking, driveways, etc.)
n) A drainage area map showing pre- and post-construction watershed boundaries (as governed by topography, not the property line), drainage areas, time of concentration (tc) path, and stormwater flow paths, including MUNICIPAL STORM DRAIN SYSTEM flows;
o) A description and drawings of all components of the proposed Stormwater Management system including:
    i. All measures for the collection, detention, retention, treatment or INFILTRATION of water;
    ii. Description of non-structural BMPs;
    iii. All measures for the protection of water quality;
    iv. The structural details for all components of the proposed drainage systems and Stormwater Management facilities;
    v. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
    vi. Proposed SITE plan including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
    vii. Any other information requested by the Board.
p) Hydrologic and hydraulic design calculations for the PRE-DEVELOPMENT and POST-DEVELOPMENT conditions for the design storms specified in the MASSACHUSETTS STORMWATER HANDBOOK. Such calculations shall include:
    i. Description of the design storm frequency, intensity and duration as required by the most current version of the MASSACHUSETTS STORMWATER HANDBOOK;
    ii. Time of concentration;
    iii. Soil Runoff Curve Number (RCN) based on land use and soil hydrologic group;
    iv. Peak RUNOFF rates and total RUNOFF volumes for each watershed area;
    v. Provisions for protecting, during construction, the INFILTRATION capacity of the soil where INFILTRATION is proposed;
    vi. Culvert capacities;
    vii. Flow velocities;
    viii. Data on the change in stormwater rates and volume of RUNOFF for the specified design storms,
    ix. Documentation of sources for all computation methods and field test results.
    x. Sizing calculations for all stormwater Best Management Practices indicating required and proposed BMP sizing.
    xi. Soil test pits at locations consistent with the requirements of the

Standards. All test pits should include estimated seasonal high groundwater elevations as determined using soil mottles, Frimpter, or another suitable method, as well as soil INFILTRATION rates Stormwater Management checklist as described in the Standards

q) Landscaping Plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.

r) An Erosion and Sedimentation Control Plan consistent with the requirements of the Massachusetts Standards including the following:
   i. Minimizing land disturbance
   ii. Site perimeter controls
   iii. Slope stabilization
   iv. Stabilized construction site entrances and exits to prevent off-site tracking of sediment
   v. Storm drain inlet protection
   vi. Temporary sedimentation basins
   vii. Locations of proposed waste control including discarded building materials, concrete truck wash out areas, chemicals, litter, and sanitary wastes. These areas are prohibited from discharging to the MS4.
   viii. Appropriate erosion and sedimentation control notes including notes that require that no land clearing is to be undertaken prior to installation of erosion and sedimentation control measures
   ix. Operations plan for the construction site
   x. Planned temporary Best Management Practices
   xi. Site stabilization following construction
   xii. Inspection of stormwater controls at regular intervals

3. If, in the applicant's opinion, one or more of the Stormwater Management Standards or other requirements cannot be reasonably met, the applicant shall provide a detailed explanation in the Stormwater Report. This narrative shall include reasons that the requirement or Standard could not be met and a description of potential consequences if no mitigating measures are provided.

J) Operations & Maintenance Agreement

The Maintenance Agreement shall include the signature(s) of the OWNER(s) and the party or parties responsible for operation and maintenance as specified in the STORMWATER PERMIT and party or parties responsible for perpetual inspections as specified under Section 12.B of these Regulations. The Maintenance Agreement shall include a map showing the "as-built" location of the systems and facilities including all structural and nonstructural stormwater best management practices (BMPs), low impact design best management practices, catch basins, manholes/access lids, pipes, and other stormwater devices. The Maintenance Agreement and plan showing such systems and facilities to be privately maintained, including associated easements shall be recorded, by the OWNER with the Norfolk County Registry of Deeds as conditioned in the STORMWATER PERMIT. Evidence of recording shall be presented to the Engineering Department prior to the issuance of the Town's final approval. The Operations & Maintenance agreement will require the annual submission of all

Operations and Maintenance Reports to the Town of Stoughton Engineering Department.

7.0 PERFORMANCE STANDARDS: STORMWATER AND LID CRITERIA

A) For compliance with Performance Standards of these Regulations, the applicant must meet all standards of the Massachusetts Department of Environmental Protection's STORMWATER MANAGEMENT STANDARDS and HANDBOOK using current Best Management Practices (BMPs) as well as the additional design criteria specified below.

B) Additional Design Criteria

1. Low Impact Design (LID) site planning and stormwater design strategies must be used to the maximum extent practicable. Specific strategies and BMPs to be considered include - but are not limited to – reducing or minimizing impervious surfaces, incorporating stormwater management facilities into landscape islands, bioretention basins, grass and surface swales, infiltrative basins and chambers, pervious pavers, etc. A decentralized approach to stormwater management, including installing different BMP's throughout the site, should be included. Traditional collect and convey systems should be minimized. In the event that LID site design strategies and BMPs are not proposed, the applicant should provide a narrative describing why these facilities cannot be incorporated into the site design.

2. Landscape Design

   SITE plans and landscape plans for all proposed projects must take appropriate steps to minimize water use for irrigation and to allow for natural RECHARGE of groundwater. Native species and habitat-creating species shall be used in all landscape plans to the maximum extent possible as SITE conditions allow. INVASIVE SPECIES shall not be planted in the Town of Stoughton under any circumstances.

   Low Impact Development surface BMP's should include a landscape plan that includes appropriate plantings. It is the intent of these Regulations that surface stormwater BMP's be incorporated into the landscape to the maximum extent practicable and not simply be shallow grassed depressions used to collect, infiltrate and/or store water.

3. Hydrologic Basis for Design

   For stormwater facility sizing criteria, refer to DEP Stormwater Management Regulations & Handbook and engineering practices. In addition to the requirements described in the DEP Stormwater Management Regulations & Handbook, the following performance standards apply to NEW developments:

   a) Retain the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area on the site;

b) Remove 90% of the annual Total Suspended Solids (TSS) generated from the total post-construction impervious area on site AND 60% of the average annual load of Total Phosphorus(TP) generated from the total post-construction impervious area on site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool.

4. For REDEVELOPMENT Projects, the following performance standards apply:

   a) Retain the volume of runoff equivalent to, or greater than, .80 inch multiplied by the total post-construction impervious surface areas on the site;
   b) Remove 80% of the average annual post-construction load of Total Suspended Solids (TSS) generated from the total post-construction impervious area on the site and 50% of the annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool.
   c) Redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems where feasible) are exempt from section 4a-c above. Roadway widening or improvements that increase the amount of impervious area on a redevelopment site are required to comply with the requirements described above.

5. Sensitive Areas – Additional Design Criteria

   Stormwater discharges to Critical Areas with sensitive resources as defined in the Massachusetts STORMWATER MANAGEMENT STANDARD No. 6 are subject to additional criteria, and may need to utilize or restrict certain STORMWATER MANAGEMENT practices at the discretion of the Board. The Board has also designated the following Sensitive Areas with specific design criteria. The Board may designate additional Sensitive Areas and specific criteria for these areas by amending these Regulations.

   1. Discharges to Water Quality Impaired Waters
      The applicant must determine whether stormwater discharges from the proposed SITE will contribute, either directly or indirectly, to an IMPAIRED WATER body. Structural and non-structural BMPs shall be selected that will control the discharge of the pollutants of concern and ensure that the discharges will not cause an instream exceedance of applicable water quality standards. Pollutants of concern refer to the pollutant identified as causing the impairment. For more information on impaired waters and the most recent Integrated List of Impaired Waterbodies, see MassDEP's TMDL website.
      a) Ames Long Pond – Turbidity
      b) Bolivar Pond – Turbidity
      c) Unnamed Tributary (MA73-32) – E.coli & Phosphorus
      d) Taunton River Watershed – Nitrogen
      e) Beaver Meadow Brook (MA73-20) – E.coli
      f) Steep Hill Brook (MA73-18)
   2. Projects that are located within a Sensitive Area or watershed that contributes

to a water body that is impaired for phosphorus shall include structural BMPs that are optimized for phosphorus removal. The applicant shall document the estimated phosphorus removal.

3. Projects that are located within a Sensitive Area or watershed that contributes to a water body that is impaired for nitrogen shall include structural BMPs that are optimized for nitrogen removal. The applicant shall document the estimated nitrogen removal.

8.0 WAIVERS

A) The Board may in its discretion and after due considerations decide to waive and exempt strict compliance with any requirement of the Stormwater Management Bylaw and these Regulations, where it makes a written finding that such action is:

1. Allowed by federal, state and local statutes and/or regulations;
2. In the public interest; and
3. Consistent with the purpose and intent of the Town of Stoughton Stormwater Management Bylaw and these Regulations.

B) An 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 the Bylaw.

C) Waivers described herein shall not constitute an exemption from any applicable Federal or State permitting requirements.

9.0 CONSTRUCTION INSPECTIONS

A) NOTICE OF CONSTRUCTION COMMENCEMENT

The applicant must notify the Engineering Department or its designee not less than 14 days prior to the commencement of construction and schedule a pre-construction meeting. In addition, the applicant must notify the Engineering Department or its designee 48 hours in advance of construction of critical components of any stormwater management facility. At this time, the applicant should produce a copy of the final Stormwater Pollution Prevention Plan as well as evidence that the project has a filed a Notice of Intent with the United States Environmental Protection Agency under the National Pollutant Discharge Elimination System Construction General Permit.

B) At the discretion of the Engineering Department, periodic inspections of the stormwater management system construction shall be conducted by qualified personnel (a Town Officer, a professional engineer, or their designee who has been approved by the Engineering Department). All inspections shall be documented and written reports prepared that contain the following information:

1. The date and location of the inspection as well as weather conditions;
2. Names, titles, and qualifications of personnel making the inspection;
3. Whether construction is in compliance with the approved STORMWATER PERMIT;
4. Variations from the approved construction specifications; and
5. Any other variations or violations of the conditions of the approved STORMWATER PERMIT.

C) EROSION CONTROL INSPECTION

1. If a project is covered by the EPA NPDES General Permit for Stormwater Discharges from Construction Activities (Construction General Permit), the permittee is required to conduct inspections in accordance with requirements of the Construction General Permit, and must submit reports of all inspections required thereunder to the Engineering Department.
2. If a project is <u>not</u> covered by the Construction General Permit, to ensure EROSION CONTROL practices are in accordance with the STORMWATER PERMIT, EROSION CONTROL Inspections will be conducted by the OWNER or an authorized representative at least once every seven (7) calendar days from the start of construction until the SITE is permanently stabilized. Inspection frequency may be reduced to at least once a month if the SITE is determined by the Board or its designee to be temporarily stabilized, such as RUNOFF is unlikely due to winter conditions (e.g., SITE is covered with snow, ice, or the ground is frozen, site is covered with mulch, stone, etc.). The permittee is required to notify the Select Board or its designee of any change in inspection frequency, including termination of inspections due to SITE stabilization.

    a. The inspection form will include:
        i. Date of inspection
        ii. Name, title, qualifications, and signature of inspector;
        iii. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
        iv. Weather information and a description of any discharges occurring at the time of the inspection
        v. Location(s) of discharges of sediment or other pollutants from the SITE;
        vi. Location(s) of BMPs that need to be maintained;
        vii. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
        viii. Location(s) where additional BMPs are needed that did not exist at prior inspection; and
        ix. Corrective action required including any changes to the STORMWATER

PERMIT necessary and implementation dates.

D) INSPECTION SCHEDULE

The Engineering Department or its designee shall inspect the project SITE at the following stages, at a minimum:

1. Initial SITE Inspection: prior to approval of any plan;

2. Inspection of site following installation of erosion and sedimentation control measures and prior to any clearing. All erosion and sedimentation control practices must be installed prior to any land clearing activities.

3. Inspection of the excavation for any infiltration facilities prior to the installation of any of the facility components (i.e. stone, pipe, chambers, etc.) to insure that adequate soil conditions exist consistent with the approved plans.

4. Stormwater Management System Inspection: An inspection will be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures.

5. Final Inspection

   a) After the stormwater management system has been constructed and stabilized, all applicants are required to submit actual "as built" plans for any stormwater management facilities or practices after final construction is completed and must be certified by a Professional Engineer. As-built plans must be submitted within two years of completion of construction.
   b) The Engineering Department or its designee shall inspect the system to confirm its "as- built" features.
   c) A copy of the Construction General Permit Notice of Termination (NOT) (required by the EPA within 30 days after land disturbance has ceased and the site is stabilized; with seventy percent (70%) permanent vegetation coverage or 70% permanent erosion and sediment controls installed) shall be submitted with the As-built.
   d) An Illicit Discharge Compliance Statement shall be submitted by the permittee's Technical Representative and Registered Professional Engineer to verify that no illicit discharges exist on the site. For redevelopment projects, the Illicit Discharge Compliance Statement shall also document all actions taken to identify and remove illicit discharges, including, without limitation, visual screening, dye or smoke testing, and the removal of any sources of illicit discharges to the stormwater management system.
   e) The permittee's Technical Representative and Registered Professional Engineer shall evaluate the effectiveness of the stormwater best management practices (BMPs) during an actual storm and document the findings. The Final Report shall also include certification from the Applicant's Technical Representative as to the effectiveness of the installed system during storm

events.

E) INADEQUACY OF SYSTEM

1. If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built in accordance with the STORMWATER PERMIT, it shall be corrected by the applicant at the applicant's cost.

2. If the Engineering Department or its designee determines that there is a failure to comply with the plan, the OWNER shall be notified in writing of the nature of the violation and the required corrective actions. The Engineering Department or its designee shall issue a STOP WORK ORDER until any violations are corrected and all work previously completed has received approval by the Engineering Department or its designee.

10.0 CONTINUING INSPECTION AND MAINTENANCE REQUIREMENTS

A) Maintenance Responsibility

The Town of Stoughton will not accept ownership of stormwater BMPs located outside of street rights of way, Town easements, or Town Parcels of land. The maintenance of such facilities shall remain the permanent responsibility of the applicant or his successors and/or assigns. The OWNER of the property on which work has been done pursuant to these Regulations for private stormwater management facilities, or any other PERSON or agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and SEDIMENTATION controls, and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans. When a project is a Definitive Subdivision, it is responsibility of the developer to maintain the stormwater system until the Subdivision is accepted by the Town. In the event a homeowner's association is created to maintain the subdivision, it will be the responsibility of the homeowner's association to maintain the stormwater management system.

B) Maintenance Inspections

1. Stormwater management facilities and practices included in the LAND DISTURBANCE PERMIT with a Maintenance Agreement in accordance with Section 6.K of these Regulations must undergo regular ongoing inspections to document maintenance, repair, replacement and disposal needs and ensure compliance with the requirements of the agreement, these Regulations, and the MASSACHUSETTS STORMWATER HANDBOOK.

2. A Maintenance Agreement as specified under Section 6.K of these Regulations between the OWNER and the Board shall be executed for privately-owned stormwater management systems that specify the PERSON for conducting long term inspections.

3. At a minimum, inspections shall occur consistent with the Operation and Maintenance requirements outlined in each project's STORMWATER PERMIT application. All BMPs require –at a minimum – annual maintenance. Some BMPs may require more frequent inspection, as specified in the STORMWATER PERMIT.

4. Inspection reports shall be submitted to the Engineering Department for all stormwater management systems. Inspection reports for stormwater management systems shall include at a minimum:

    a) The date of inspection;
    b) Weather conditions, including temperature and precipitation, if any;
    c) Name and signature of inspector;
    d) The condition of:
        i. Pretreatment devices
        ii. Vegetation or filter media
        iii. Fences or other safety devices
        iv. Spillways, valves, or other control structures
        v. Embankments, slopes, and safety benches
        vi. Reservoir or treatment areas
        vii. Inlet and outlet channels and structures
        viii. Underground drainage
        ix. Sediment and debris accumulation in storage and fore bay areas (including catch basins)
        x. Any nonstructural practices
        xi. Any other item that could affect the proper function of the stormwater management system
    e) Description of the need for maintenance.
    f) In the event that maintenance activities are performed by a private contractor, a copy of the contract or agreement to provide the maintenance.

C) Right-of-Entry for Inspection

The terms of the Maintenance Agreement as specified in Section 6.K of these Regulations shall provide for the Engineering Department or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection.

D) Records of Inspections, Maintenance, Repair, Replacement and Operations
OWNERs are responsible for the operation and maintenance of a stormwater management facility shall prepare records of the installation and of all inspections, maintenance, repairs, replacement, and disposal activities, and shall retain the records for at least five years. These records shall be submitted to the Engineering Department annually, at a minimum, and upon request. For disposal, the record must indicate the type of material, quantity of material, and disposal location.

E) Failure to Maintain

1. If the OWNER fails or refuses to meet the requirements of the Maintenance

Agreement, the Engineering Department, after 30 days' written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24-hour notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the facility or practice in proper working condition. The Engineering Department may assess the OWNER(s) of the facility for the cost of repair work, which shall be a lien on the property.

2. After notification is provided to the PERSON responsible for carrying out the maintenance plan of any deficiencies discovered from an inspection of a stormwater management system, the PERSON responsible for carrying out the maintenance plan shall have 30 days or other time frame mutually agreed to between the Engineering Department and the PERSON responsible for carrying out the maintenance plan to correct the deficiencies. The Engineering Department shall then conduct a subsequent inspection to ensure completion of repairs.

11.0 ILLICIT DISCHARGES

Any property owner or party, who illegally discharges non-stormwater pollutants, including sanitary sewer discharges, as described in the Stormwater Management Bylaw, Section 159, must eliminate discharges to the MS4 system within 60 days of identification.

12.0 ENFORCEMENT

A) Enforcement powers of the Select Board or its designee are granted in the Stormwater Management Bylaw, Section 159.9.

B) Notices and Orders

1. The Select Board or an authorized agent of the Select Board may issue a written notice of violation or enforcement order to enforce the provisions of the Stormwater Management Bylaw and these Regulations, which may include:

   a) Elimination of illicit connections or discharges to the MS4;
   b) That unlawful discharges, practices, or operations shall cease and desist;
   c) Remediation of contamination in connection therewith;
   d) Suspension or revoke of approval of any STORMWATER PERMIT;
   e) Cease and desist from all or a portion of construction or land disturbing activity until there is compliance with the Bylaw and the STORMWATER PERMIT;
   f) Repair, maintain, or replace the stormwater management system or portions thereof in accordance with the Maintenance Agreement;
   g) Perform monitoring, analyses, and reporting; and/or
   h) Fix adverse impact resulting directly or indirectly from malfunction of the stormwater management system.

2. The suspension or revocation of the STORMWATER PERMIT shall not relieve the Applicant of his obligation thereunder except at the discretion of the Board.

C) Any PERSON who purchases, inherits or otherwise acquires real estate upon which work has been done in violation of the provisions of the Stormwater Management Bylaw and these Regulations, or in violation of the approved Plans under this Section shall forthwith comply with any such Order, and restore such real estate to its condition prior to such violation, as the applicable Board, Commission, or Engineering Department deems necessary to remedy such violation.

D) Criminal Violation. Any PERSON who violates any provision of the Town of Stoughton Stormwater Management Bylaw, these Regulations, or order or permit issued thereunder, may be ordered to correct the violation and/or shall be punished by a fine of not more than $300.00, excluding the cost of damages. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

E) Non-Criminal Disposition. As an alternative to criminal prosecution or civil action, the Town of Stoughton may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch. 40, §21D and the Town of Stoughton General Bylaws Chapter 1.2 A in which case the Board shall be the enforcing PERSON. The provisions of the General Bylaws Chapter 1.2 A as to the monetary penalties shall prevail. The penalty for the 1st violation shall be $100.00. The penalty for the 2nd and subsequent violations shall be $300.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

F) Entry to Perform Duties Under these Regulations. 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 these Regulations and may make or cause to be made such examinations, surveys or sampling as the Board deems reasonably necessary.

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

H) Remedies Not Exclusive. The remedies listed in these Regulations are not exclusive of any other remedies available under any applicable federal, state or local law.

13.0 SEVERABILITY

The invalidity of any section, provision, paragraph, sentence, or clause of these Regulations shall not invalidate any section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

APPENDIX A

SUMMARY OF STORMWATER PERMIT PROCESS

STORMWATER PERMIT PROCESS
Permit Authority
Stoughton Select Board
⇩
Applicability
Land Development Projects with greater than 1 acre of Land Disturbance (i.e. commercial site plans, subdivisions, etc.)
⇩
Permit Requirements
Application
Filing Fee
Site Plans
Description of Low Impact Design Measures
Stormwater Report demonstrating compliance with MA Stormwater Management Standards and Massachusetts MS4 performance standards)
Operation and Maintenance Plan
Erosion & Sediment Control Plan
Stormwater Pollution Prevention Plan (SWPPP)
⇩
Public Hearings and Meetings
Permit is reviewed by the Enginering Department during public hearings and/or meetings through the Planning Board and/or Conservation Commission
All projects reviewed by Stoughton Engineering Department
⇩
Stormwater Inspections
Erosion Controls installed prior to construction
Erosion Controls inspected weekly by Owner representative
Infiltration facilities bottom inspection prior to component install (Open Hole)
Stormwater Management System component inspection prior to backfill
Final Inspection and As-built Review
⇩
Final Approval
Illicit Discharge Compliance Statement submittal
Final Certification of Design Engineer
Final review and approval of Town Engineer

APPENDIX B

STORMWATER PERMIT APPLICATION

STOUGHTON
MASSACHUSETTS

Stormwater Management Permit Application

Permit Applicability

How much New Impervious Area (square feet) will result from the Project?	How much Disturbed Land Area will result from the Project?

Town Engineer's Approval as to Applicability: Y/N _____ Signature:

Property Owner Information:

Name		**Signature**	
Address		**City, State, Zip**	
Email		**Phone**	

Applicant Information:

Name		**Signature**	
Address		**City, State, Zip**	
Email		**Phone**	

Applicant Representative:

Name		**Signature**	
Address		**City, State, Zip**	
Email		**Phone**	

Project Information:

Address						
City			**State**		**Zip**	
Property Information	**Map**	**Block**	**Lot**	**Unit**	**Lot Area**	

Description of Project	
List Zoning Districts *Include all Districts including Overlay Districts*	
Surface Waters to which the Project Discharges	
Other Permits Requested/Received *Attach additional sheets if needed*	

Stormwater Management Permit Application (Continued)				
Project Specifics	**Yes**	**No**	**N/A**	**Description** *(Attach additional sheets as needed)*
Will the project result in the disturbance of one or more acres of land?	☐	☐	☐	
Will the project result in the discharge of stormwater to Critical Areas with Sensitive Resources as described by Massachusetts Stormwater Management Standard No. 6?	☐	☐	☐	
Will the project discharge stormwater to an impaired water body?	☐	☐	☐	
Will the project include the construction of Stormwater Management Facilities?	☐	☐	☐	
Will the construction activity be located within the Town's MS4 area?	☐	☐	☐	

Submission Checklist

- Completed Application form with original signatures and Fee
- Project Narrative describing existing conditions, proposed development and methods used to mitigate stormwater impacts. Narrative should include the evaluation and implementation of Low Impact Development Management Practices for stormwater management.
- Stormwater Management Plan stamped by a Registered Professional Engineer to include at a minimum the following:
  - Existing Conditions Plan with Property Information, existing grades taken from a topographic survey, existing utilities, drainage, tree line, wetland boundaries, flood zones, and soils classifications.
  - Proposed work shall include all site layout, grading, utilities, stormwater management systems, soil testing data, proposed tree line, and limit of work.
- Stormwater Report signed and stamped by Registered Professional Engineer that includes:
  - Completed MassDEP Stormwater Checklist
  - Pre & Post development hydrologic calculations
  - Hydraulic calculations for all pipes, swales, etc.
- Stormwater Pollution and Prevention Plan (SWPPP)
- Operations and Maintenance Plan in accordance with the Regulations

Filing Fees

1. General. A non-refundable application fee shall be due and payable to the Town of Stoughton at the time an application is filed. The application fee will be used for processing of the application, coordination of Town staff, inspections by Town staff and other expenses connected with the review of the application by Town staff.

2. Rules

   a) Stormwater Permit Application and Review Fees are non-refundable. All fees shall be calculated by the Engineering Department in accordance with the fee schedule in Table 1 below.
   b) These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local Bylaw.
   c) Federal, State, and Municipal projects shall be exempt from Application Fees associated with a STORMWATER PERMIT.
   d) The fee includes two follow-up reviews for plan and document revisions.
   e) The fees denoted below shall not be used to calculate review fees for outside consultants. Additional review fees may be charged to cover outside professional consultant review services for a project if the Town Engineer determines that such services are necessary due to the scope and complexity of the project.

Filing Fee Schedule for Stormwater Permits

Application Type	Fee
Disturbance area is 1.0 to 2.0 acres	$1,000
Disturbance area is 2.0 to 5 acres	$1,500
Disturbance area is 5.0 to 10.0 acres	$2,000
Disturbance area of 10.0 acres or more	$2,500

Signatures

I hereby certify under the penalties of perjury that the submitted plans, documents and supporting data are true, accurate and in compliance with the Town Stormwater Management By-law and Regulations.

_____ _____

Signature of applicant Date

_____ _____

Signature of Representative's Engineer Date

APPENDIX C

STORMWATER PERMIT VIOLATION FORM

STOUGHTON
MASSACHUSETTS

NOTICE OF VIOLATION

Town of Stoughton Rules & Regulations for Stormwater Management

DATE:	
TOWN INSPECTOR:	
PROPERTY ADDRESS:	
PROPERTY OWNER:	
PROPERTY OWNER CONTACT INFORMATION **PHONE:**	**EMAIL:**
NATURE OF VIOLATION:	
REGULATION SECTION CITED:	

WARNING ☐

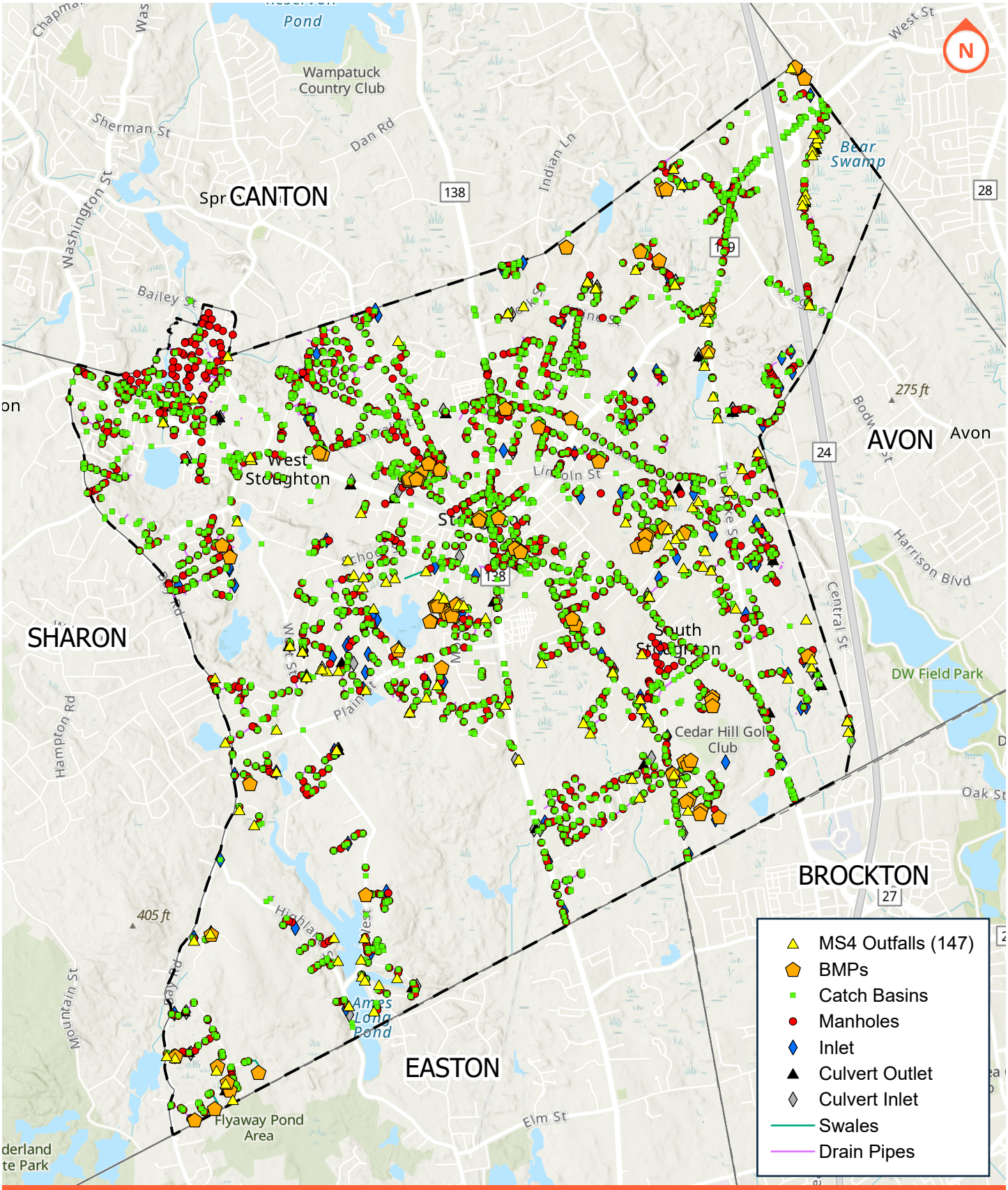
1st OFFENSE ☐

SUBSEQUENT OFFENSE ☐

FINE AMOUNT:		
ISSUED BY:	**SIGNED:**	**DATE:**

APPENDIX B

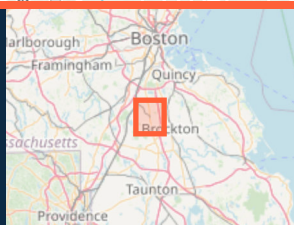
Stormwater System Mapping



ENVIRONMENTAL PARTNERS
An Apex Company

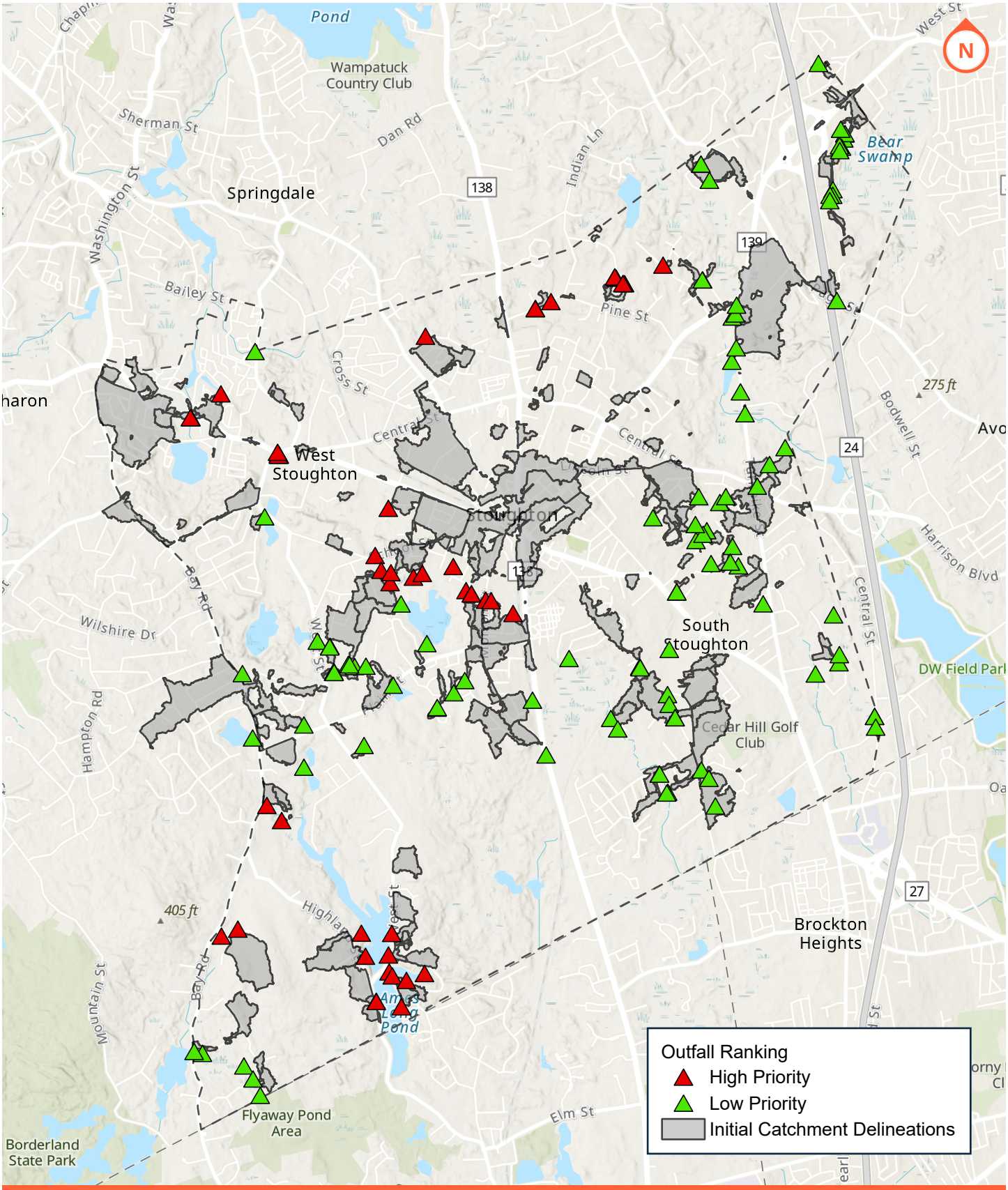
Appendix B
Stormwater System
Stoughton, Massachusetts
9/1/2022

0 2,500 5,000 10,000 Feet
1:50,000



APPENDIX C

Catchment Delineation Mapping and Ranking Matrix



ENVIRONMENTAL PARTNERS
— An Apex Company —

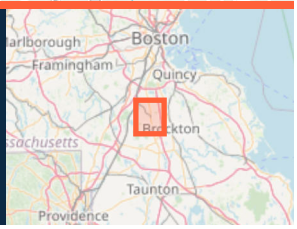
Appendix C

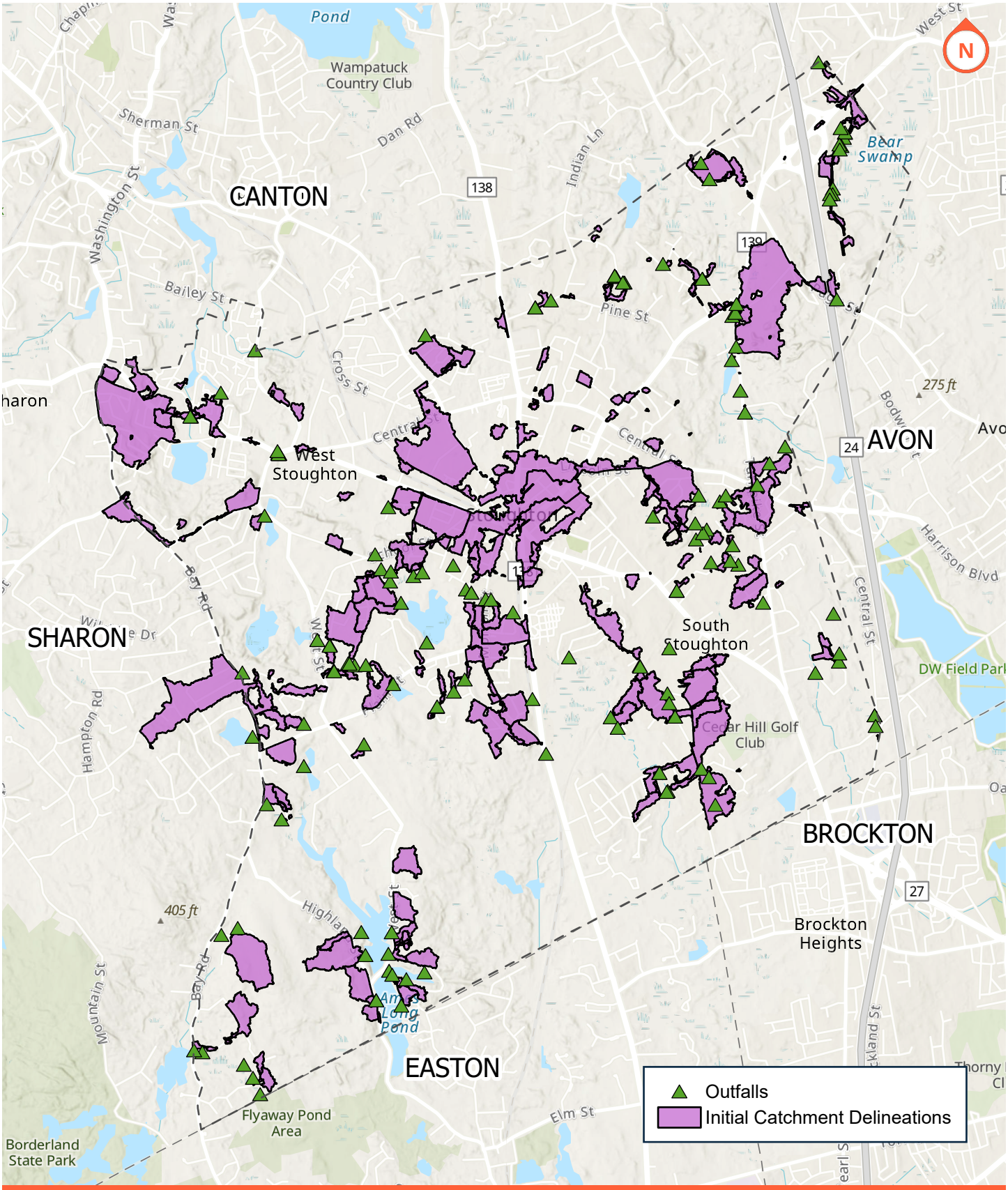
Catchment Ranking

Stoughton, Massachusetts

9/16/2022

0 2,500 5,000 10,000 Feet 1:50,000





ENVIRONMENTAL PARTNERS
— An Apex Company —

Appendix C

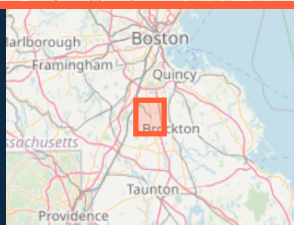
Initial Catchment Delineations

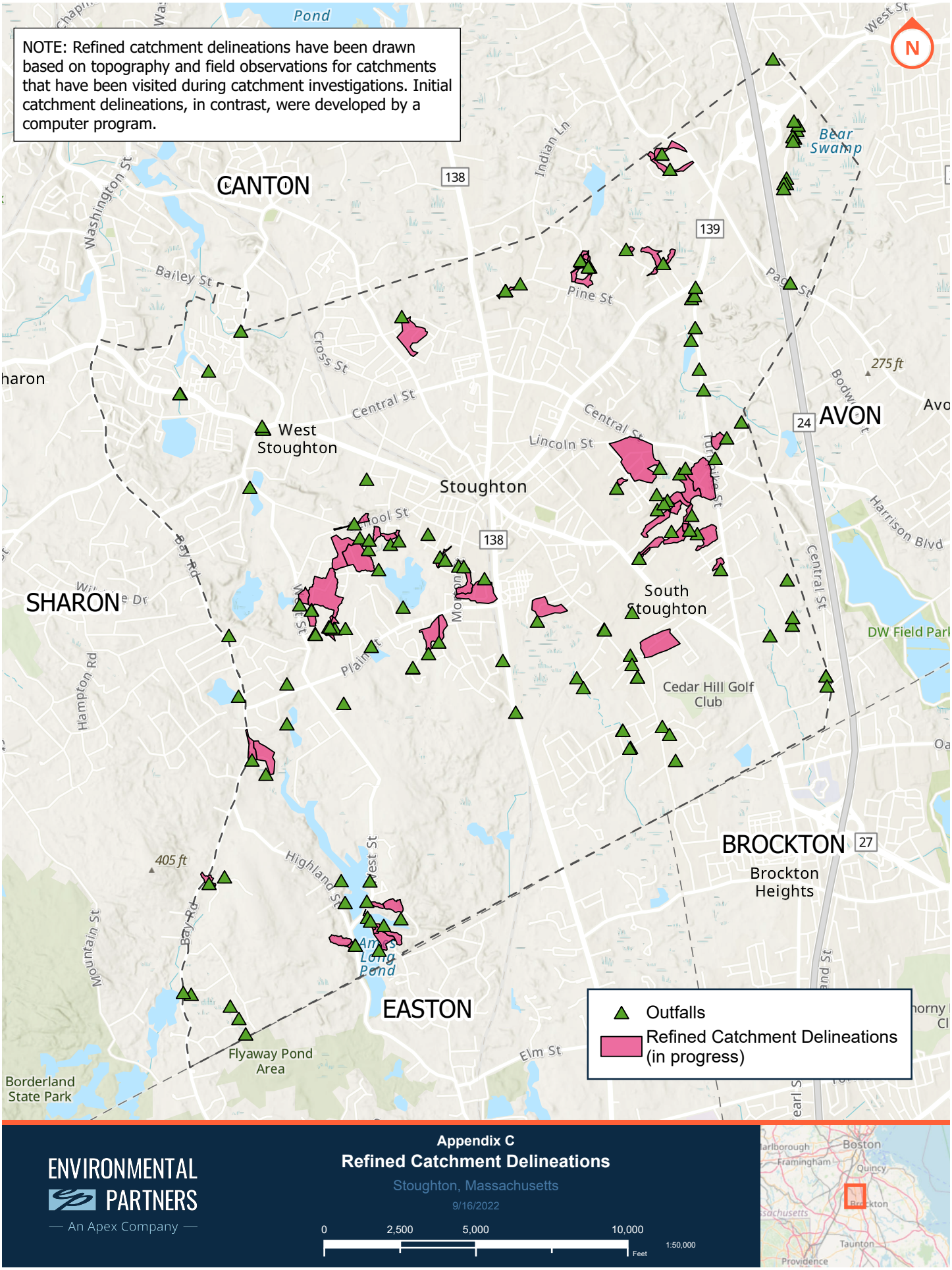
Stoughton, Massachusetts

9/16/2022

0 2,500 5,000 10,000 Feet

1:50,000




NOTE: Refined catchment delineations have been drawn based on topography and field observations for catchments that have been visited during catchment investigations. Initial catchment delineations, in contrast, were developed by a computer program.
CANTON
West Stoughton
Stoughton
SHARON
AVON
South Stoughton
BROCKTON
Brockton Heights
EASTON
Cedar Hill Golf Club
Flyaway Pond Area
Borderland State Park
Bear Swamp
Ames Long Pond
Outfalls
Refined Catchment Delineations (in progress)
Appendix C
Refined Catchment Delineations
Stoughton, Massachusetts
9/16/2022
0
2,500
5,000
10,000
Feet
1:50,000
ENVIRONMENTAL PARTNERS
An Apex Company

Stormwater Outfall Ranking Table
Stoughton, MA
September, 2022

Catchment ID	Receiving Water	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Converted Septic?	Aging Septic?	Receiving Water Quality	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Outfall Screening/Sampling Results		Outfall Score	Outfall Ranking *
	Information Source		Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	Impaired Waters List	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results		
	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	Category 4a = 2 Category 5 = 1 Others = 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				
AF	Unnamed Tributary to Steep Hill Brook	OF-150	0	0	0	0	1	2	1	0	0	2016 - Flow	2019 - Dry	4	High
AG	Unnamed Tributary to Steep Hill Brook	OF-151	0	0	0	0	1	2	1	0	0	2016 - Dry	2019 - Dry	4	High
EU	Ames Long Pond	OF-376	0	0	0	2	1	0	1	0	0		2019 - Dry	4	High
EV	Ames Long Pond	OF-378	0	0	0	2	1	0	1	0	0		2021 - Sampled	4	High
GB	Ames Long Pond	OF-547	0	0	0	2	1	0	1	0	0		2019 - Dry	4	High
HW	Ames Long Pond	OF-553	0	0	0	2	1	0	1	0	0		2019 - Dry	4	High
HX	Ames Long Pond	OF-554	0	0	0	2	1	0	1	0	0		2019 - Dry	4	High
IM	Unnamed Tributary to Steep Hill Brook	OF-580	0	0	0	0	1	2	1	0	0		2021 - Sampled	4	High
OJ	Unnamed Tributary to Unnamed Tributary (MA73-32)	OF-728	1	0	0	0	1	2	0	0	0		2022 - Sampled	4	High
OC	Unnamed Tributary to Steep Hill Brook	OF-793	1	0	0	0	1	2	0	0	0		2022 - Sampled	4	High
AK	Unnamed Tributary to Steep Hill Brook	OF-156	0	0	0	2	1	0	0	0	0		2019 - Dry	3	High
AN	Unnamed Tributary to Ames Long Pond	OF-159	0	0	0	2	1	0	0	0	0	2016 - Dry	2019 - Dry	3	High
BG	Ames Long Pond	OF-204	0	0	0	2	1	0	0	0	0		2021 - Dry	3	High
BJ	Ames Long Pond	OF-207	0	0	0	2	1	0	0	0	0		2021 - Sampled	3	High
BN	Ames Long Pond	OF-211	0	0	0	2	1	0	0	0	0		2021 - Sampled	3	High
CH	Unnamed Tributary to Ames Long Pond	OF-249	0	0	0	2	1	0	0	0	0		2019 - Dry	3	High
CI	Unnamed Tributary to Ames Long Pond	OF-251	0	0	0	2	1	0	0	0	0		2021 - Dry	3	High
ED	Unnamed Tributary to Ames Long Pond	OF-351	0	0	0	2	1	0	0	0	0		2021 - Dry	3	High
BE	Ames Long Pond	OF-202	0	0	0	0	1	0	1	0	0		2021 - Dry	2	High
KO	Unnamed Tributary to Steep Hill Brook	OF-545	1	0	0	0	1	0	0	0	0		2022 - Sampled	2	High
KC	Unnamed Tributary to Steep Hill Brook	OF-671	0	0	0	0	1	0	1	0	0		2019 - Dry	2	High
AC	Unnamed Tributary to Steep Hill Brook	OF-148	0	0	0	0	1	0	0	0	0	2016 - Dry	2019 - Sampled	1	High
AW	Beaver Meadow Brook	OF-193	0	0	0	0	1	0	0	0	0	2016 - Dry	2019 - Dry	1	High
AW	Beaver Meadow Brook	OF-194	0	0	0	0	1	0	0	0	0	2016 - Dry	2021 - Dry	1	High
AW	Beaver Meadow Brook	OF-195	0	0	0	0	1	0	0	0	0	2016 - Dry	2016 - Dry	1	High
BF	Ames Long Pond	OF-203	0	0	0	0	1	0	0	0	0		2021 - Dry	1	High
CV	Beaver Meadow Brook	OF-286	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
DI	Beaver Meadow Brook	OF-306	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
DO	Unnamed Tributary to Steep Hill Brook	OF-323	0	0	0	0	1	0	0	0	0		2019 - Sampled	1	High
DP	Unnamed Tributary to Steep Hill Brook	OF-324	0	0	0	0	1	0	0	0	0		2021 - Sampled	1	High
DU	Beaver Meadow Brook	OF-334	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
EC	Unnamed Tributary to Steep Hill Brook	OF-350	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
EW	Beaver Meadow Brook	OF-38	0	0	0	0	1	0	0	0	0	2016 - Dry	2019 - Dry	1	High
EZ	Beaver Meadow Brook	OF-39	0	0	0	0	1	0	0	0	0	2016 - Dry	2019 - Dry	1	High
FG	Unnamed Tributary to Beaver Meadow Brook	OF-42	0	0	0	0	1	0	0	0	0	2016 - Dry	2020 - Dry	1	High
FX	Unnamed Tributary to Steep Hill Brook	OF-450	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
FZ	Beaver Meadow Brook	OF-455	0	0	0	0	1	0	0	0	0		2021 - Dry	1	High
GA	Beaver Meadow Brook	OF-456	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
GH	Unnamed Tributary to Steep Hill Brook	OF-465	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
GK	Unnamed Tributary to Steep Hill Brook	OF-469	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
JF	Unnamed Tributary (MA73-32)	OF-612	0	0	0	0	1	0	0	0	0		2019 - Dry	1	High
JF	Unnamed Tributary to Steep Hill Brook	OF-64	0	0	0	0	1	0	0	0	0	2016 - Dry	2016 - Dry	1	High

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

ENVIRONMENTAL PARTNERS
— An Apex Company —

Stormwater Outfall Ranking Table
Stoughton, MA
September, 2022

Catchment ID	Receiving Water	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Converted Septic?	Aging Septic?	Receiving Water Quality	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Outfall Screening/Sampling Results		Outfall Score	Outfall Ranking *
	Information Source		Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	Impaired Waters List	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results		
	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	Category 4a = 2 Category 5 = 1 Others = 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				
JS	Unnamed Tributary (MA73-32)	OF-65	0	0	0	0	1	0	0	0	0	2016 - Dry	2019 - Dry	1	High
JF	Unnamed Tributary to Steep Hill Brook	OF-742	0	0	0	0	1	0	0	0	0	2016 - Dry	2016 - Dry	1	High
MJ	Steep Hill Brook	OF-747	0	0	0	0	1	0	0	0	0	2016 - Dry	2016 - Dry	1	High
MK	Steep Hill Brook	OF-748	0	0	0	0	1	0	0	0	0	2016 - Flow	2019 - Dry	1	High
JF	Unnamed Tributary to Steep Hill Brook	OF-757	0	0	0	0	1	0	0	0	0	2016 - Dry	2016 - Dry	1	High
MT	Beaver Meadow Brook	OF-759	0	0	0	0	1	0	0	0	0	2016 - Dry	2020 - Dry	1	High
NE	Ames Long Pond	OF-77	0	0	0	0	1	0	0	0	0	2016 - Dry	2021 - Sampled	1	High
CO	Unnamed Wetlands near Lovett Brook	OF-103	1	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	3	Low
MD	Unnamed Tributary to Brockton Reservoir	OF-104	1	0	0	2	0	0	0	0	0		2021 - Dry	3	Low
B	Lovett Brook	OF-105	1	0	0	2	0	0	0	0	0		2020 - Dry	3	Low
EF	Unnamed Wetlands to Three Swamp Brook	OF-355	1	0	0	2	0	0	0	0	0		2020 - Dry	3	Low
EI	Unnamed Wetlands to Three Swamp Brook	OF-358	1	0	0	2	0	0	0	0	0		2020 - Dry	3	Low
OE	Unnamed Wetlands near Lovett Brook	OF-98	1	0	0	2	0	0	0	0	0	2016 - Dry	2020 - Dry	3	Low
KF	Plain Street Pond	OF-300	0	0	0	2	0	0	0	0	0		2021 - Dry	2	Low
DS	Unnamed Wetlands to Three Swamp Brook	OF-330	0	0	0	2	0	0	0	0	0		2020 - Dry	2	Low
DJ	Unnamed Tributary to Town Pond	OF-342	0	0	0	2	0	0	0	0	0		2021 - Dry	2	Low
EE	Unnamed Wetlands to Three Swamp Brook	OF-354	0	0	0	2	0	0	0	0	0		2020 - Dry	2	Low
GJ	Briggs Pond	OF-399	0	0	0	2	0	0	0	0	0		2020 - Dry	2	Low
FV	Unnamed Tributary To Beaver Brook	OF-444	0	0	0	2	0	0	0	0	0		2020 - Dry	2	Low
GJ	Briggs Pond	OF-468	0	0	0	2	0	0	0	0	0		2021 - Dry	2	Low
GV	Unnamed Tributary To Beaver Brook	OF-492	0	0	0	2	0	0	0	0	0		2021 - Dry	2	Low
IS	Unnamed Wetlands to Beaver Brook	OF-588	0	0	0	2	0	0	0	0	0	2015 - Dry	2015 - Dry	2	Low
JH	Beaver Brook	OF-616	0	0	0	2	0	0	0	0	0		2021 - Dry	2	Low
KI	Plain Street Pond	OF-69	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	2	Low
LD	Unnamed Wetlands near Lovett Brook	OF-710	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	2	Low
MA	Unnamed Tributary to Bolivar Pond	OF-735	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	2	Low
ME	Unnamed Pond	OF-739	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	2	Low
MG	Unnamed Wetlands near Lovett Brook	OF-743	0	0	0	2	0	0	0	0	0	2016 - Flow	2021 - Sampled	2	Low
MG	Unnamed Wetlands near Lovett Brook	OF-744	0	0	0	2	0	0	0	0	0	2016 - Dry	2019 - Dry	2	Low
MO	Unnamed Tributary to Beaver Brook	OF-753	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	2	Low
MY	Dry Pond	OF-764	0	0	0	2	0	0	0	0	0	2016 - Dry	2016 - Dry	2	Low
ND	Town Pond	OF-769	0	0	0	2	0	0	0	0	0		2021 - Dry	2	Low
OD	Unnamed Tributary	OF-803	0	0	0	2	0	0	0	0	0		2022 - Dry	2	Low
OF	Unnamed Tributary	OF-804	0	0	0	2	0	0	0	0	0		2022 - Dry	2	Low
DT	Unnamed Wetlands to Three Swamp Brook	OF-331	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
EG	Unnamed Wetlands to Three Swamp Brook	OF-356	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
EH	Unnamed Wetlands to Three Swamp Brook	OF-357	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
EL	Unnamed Wetlands to Three Swamp Brook	OF-362	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
HI	Unnamed Tributary to Beaver Brook	OF-516	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
DS	Unnamed Wetlands to Three Swamp Brook	OF-634	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
MP	Unnamed Tributary To Beaver Brook	OF-754	1	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	1	Low
NS	Unnamed Wetlands	OF-792	1	0	0	0	0	0	0	0	0		2021 - Sampled	1	Low

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

ENVIRONMENTAL PARTNERS
— An Apex Company —

Stormwater Outfall Ranking Table
Stoughton, MA
September, 2022

Catchment ID	Receiving Water	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Converted Septic?	Aging Septic?	Receiving Water Quality	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Outfall Screening/Sampling Results		Outfall Score	Outfall Ranking *
	Information Source		Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	Impaired Waters List	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results		
	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	Category 4a = 2 Category 5 = 1 Others = 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				
HI	Unnamed Tributary to Beaver Brook	OF-801	1	0	0	0	0	0	0	0	0		2020 - Dry	1	Low
OK	Beaver Brook	OF-809	1	0	0	0	0	0	0	0	0		2022 - Dry	1	Low
E	Unnamed Tributary to Beaver Brook	OF-108	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	0	Low
F	Unnamed Wetlands to Beaver Brook	OF-109	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	0	Low
I	Unnamed Tributary near Dorchester Brook	OF-112	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
J	Dorchester Brook	OF-113	0	0	0	0	0	0	0	0	0	2016 - Dry	2021 - Dry	0	Low
Z	Unnamed Tributary near Woods Pond	OF-144	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
AH	Unnamed Tributary to Town Pond	OF-152	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
AH	Unnamed Tributary to Town Pond	OF-153	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	0	Low
AI	Unnamed Tributary to Town Pond	OF-154	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	0	Low
BK	Unnamed Tributary to Town Pond	OF-209	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
BR	Unnamed Tributary to Beaver Brook	OF-217	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
BU	Unnamed Tributary near Woods Pond	OF-226	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
BW	Unnamed Tributary to Dorchester Brook	OF-231	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
AA	Woods Pond	OF-242	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
CD	Unnamed Wetlands to Beaver Brook	OF-243	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
CE	Unnamed Wetlands to Beaver Brook	OF-244	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
CF	Unnamed Wetlands to Beaver Brook	OF-245	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
CG	Unnamed Tributary to Beaver Brook	OF-246	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
CR	Unnamed Tributary To Beaver Brook	OF-279	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
DG	Unnamed Tributary To Beaver Brook	OF-304	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
DN	Woods Pond	OF-322	0	0	0	0	0	0	0	0	0		2021 - Sampled	0	Low
EJ	Unnamed Wetlands to Three Swamp Brook	OF-359	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
EN	Unnamed Wetlands to Beaver Brook	OF-366	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
EO	Unnamed Wetlands to Beaver Brook	OF-367	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
EX	Unnamed Tributary to Dorchester Brook	OF-380	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
FF	Unnamed Tributary	OF-419	0	0	0	0	0	0	0	0	0		2022 - Dry	0	Low
FK	Unnamed Tributary to Beaver Brook	OF-426	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
FO	Unnamed Tributary to Beaver Brook	OF-431	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
FO	Unnamed Tributary to Beaver Brook	OF-432	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
AH	Unnamed Tributary to Town Pond	OF-440	0	0	0	0	0	0	0	0	0		2021 - Sampled	0	Low
FY	Unnamed Tributary to Town Pond	OF-453	0	0	0	0	0	0	0	0	0		2021 - Sampled	0	Low
GC	Unnamed Tributary to Beaver Brook	OF-458	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
GD	Unnamed Tributary to Beaver Brook	OF-459	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
GF	Unnamed Tributary to Dorchester Brook	OF-463	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
GG	Unnamed Tributary to Dorchester Brook	OF-464	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
GP	Town Pond	OF-478	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
HQ	Dorchester Brook	OF-54	0	0	0	0	0	0	0	0	0	2016 - Dry	2020 - Dry	0	Low
HU	Dorchester Brook	OF-55	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
IB	Dorchester Brook	OF-56	0	0	0	0	0	0	0	0	0	2016 - Flow	2019 - Dry	0	Low
IE	Unnamed Tributary to Dorchester Brook	OF-57	0	0	0	0	0	0	0	0	0		2019 - Dry	0	Low

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

ENVIRONMENTAL PARTNERS
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Stormwater Outfall Ranking Table
Stoughton, MA
September, 2022

Catchment ID	Receiving Water	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Converted Septic?	Aging Septic?	Receiving Water Quality	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Outfall Screening/Sampling Results		Outfall Score	Outfall Ranking *
Information Source			Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	Impaired Waters List	GIS and Storm System Maps	GIS Maps, Town Input	Outfall inspections and sample results	Town Input	2003 MS4 Permit Sampling Results	2016 MS4 Permit Sampling Results		
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	Category 4a = 2 Category 5 = 1 Others = 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				
IR	Unnamed Tributary to Beaver Brook	OF-587	0	0	0	0	0	0	0	0	0		2021 - Sampled	0	Low
IU	Unnamed Tributary near Woods Pond	OF-59	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
IY	Unnamed Tributary near Woods Pond	OF-60	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
JD	Unnamed Tributary to Beaver Brook	OF-610	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
JM	Unnamed Wetlands to Beaver Brook	OF-636	0	0	0	0	0	0	0	0	0		2020 - Dry	0	Low
JN	Unnamed Tributary to Town Pond	OF-641	0	0	0	0	0	0	0	0	0	2015 - Dry	2021 - Dry	0	Low
JU	Unnamed Tributary to Town Pond	OF-653	0	0	0	0	0	0	0	0	0	2015 - Dry	2015 - Dry	0	Low
JZ	Unnamed Tributary to Town Pond	OF-664	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
OU	Unnamed Tributary To Beaver Brook	OF-669	0	0	0	0	0	0	0	0	0		2021 - Dry	0	Low
KL	Unnamed Tributary To Beaver Brook	OF-694	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
JN	Unnamed Tributary to Town Pond	OF-70	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
LG	Unnamed Tributary near Dorchester Brook	OF-713	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
LO	Unnamed Pond near Woods Pond	OF-723	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
MH	Unnamed Tributary to Beaver Brook	OF-745	0	0	0	0	0	0	0	0	0	2016 - Flow	2019 - Dry	0	Low
MQ	Unnamed Tributary to Beaver Brook	OF-755	0	0	0	0	0	0	0	0	0	2016 - Flow	2019 - Dry	0	Low
MR	Unnamed Tributary to Beaver Brook	OF-756	0	0	0	0	0	0	0	0	0	2016 - Flow	2021 - Dry	0	Low
MX	Unnamed Tributary to Beaver Brook	OF-762	0	0	0	0	0	0	0	0	0	2016 - Dry	2016 - Dry	0	Low
NN	Beaver Brook	OF-788	0	0	0	0	0	0	0	0	0		2021 - Sampled	0	Low
OG	Unnamed Tributary	OF-805	0	0	0	0	0	0	0	0	0		2022 - Dry	0	Low
OH	Unnamed Tributary to Beaver Brook	OF-806	0	0	0	0	0	0	0	0	0		2022 - Sampled	0	Low
OI	Unnamed Tributary near Dorchester Brook	OF-807	0	0	0	0	0	0	0	0	0		2022 - Dry	0	Low
OL	Unnamed Tributary to Beaver Brook	OF-810	0	0	0	0	0	0	0	0	0		2022 - Dry	0	Low

* Note: All outfalls draining to Category 4a or Category 5 waterways are ranked as High Priority

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

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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

Stoughton Outfall Sampling Results
Stoughton, MA
September 2022

			Field Test Results							Analytical Results												
Outfall ID	Discharging Waterbody	Sample Date	Temp. (˚C)	Specific Conductance (µS/cm) *Threshold: 2000*	Salinity (ppt)	pH *Threshold: 6.5-8.0*	DO (mg/L)	Total Chlorine (mg/L) *Threshold: 0.1*	Oxygen Reduction Potential (mV)	Ammonia as Nitrogen (mg/L) *Threshold: 0.5*	Chlorine, TRC (mg/L) *Threshold: 0.1*	Chloride (mg/L)	Fecal Coliform, MF (col/100ml)	E. coli (MPN/100 mL) *Threshold: 236*	Phosphorus, Total (mg/L)	Surfactants, MBAS (mg/L) *Threshold: 0.25*	Biological Oxygen Demand, BOD (mg/L)	Nitrogen, Total (mg/L)	Nitrate as Nitrogen (mg/L)	Nitrite as Nitrogen (mg/L)	Turbidity (NTU)	Total Suspended Solids, TSS (mg/L)
OF-202	Ames Long Pond	5/15/2019	2.8	247.3	2.10	8.89	14.66	-	-	0.04	ND	-	-	1	-	0.011	-	1.08	0.603	ND	ND	ND
OF-203	Ames Long Pond	5/15/2019	3.7	272.1	0.16	7.21	18.95	-	-	ND	ND	-	-	2	-	0.027	-	1.45	0.276	ND	35.7	35.7
OF-207	Ames Long Pond	5/9/2019	4.3	510.4	0.25	6.60	20.03	-	-	ND	ND	-	-	<1.0	-	ND	-	0.84	0.292	ND	1.1	1.1
		5/21/2021	12.0	743	0.37	9.43	6.30	-	-	ND	-	220	33	410.58	-	ND	-	-	-	-	0.92	28
		7/15/2021	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-211	Ames Long Pond	5/9/2019	4.7	406.5	0.20	7.20	17.60	-	-	ND	ND	-	-	<1.0	-	ND	-	0.80	0.342	ND	ND	ND
		5/21/2021	12.7	325.6	0.16	7.45	6.60	-	-	ND	-	84	ND	<1	-	ND	-	-	-	-	0.42	ND
		7/15/2021	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-378	Ames Long Pond	5/9/2019	7.8	37.5	0.02	6.55	13.92	-	-	ND	ND	-	-	1	-	ND	-	0.58	ND	ND	ND	ND
		5/18/2021	14.7	34.3	0.01	6.61	7.48	-	-	0.087	-	-	ND	1*	-	ND	-	-	-	-	-	-
		6/24/2021	-	-	-	-	-	-	-	-	-	5.8	38	40.2	-	-	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-77	Ames Long Pond	5/9/2019	4.5	220.6	0.11	5.87	13.77	-	-	ND	1.87	-	-	2*	-	0.04	-	0.90	0.101	ND	ND	ND
		5/18/2021	11.9	304.8	0.15	5.79	7.12	-	-	ND	-	68	2*	<1*	-	ND	-	-	-	-	2.1	15
		7/15/2021	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-455	Beaver Meadow Brook	5/1/2019	10.7	463	0.62	6.24	9.30	-	-	ND	ND	-	-	2	ND	0.036	-	-	-	-	-	-
OF-113	Dorchester Brook	5/15/2019	8.8	332.1	2.70	6.84	12.04	-	-	ND	ND	-	-	10.9	-	0.023	-	2.57	2.110	ND	-	-
OF-756	Unnamed Tributary to Beaver Brook	5/15/2019	2.8	238.6	0.11	9.75	20.41	-	-	ND	ND	-	-	4.1	-	0.012	-	0.76	0.283	ND	-	-
OF-464	Unnamed Tributary to Dorchester Brook	5/1/2019	2.4	506.3	0.24	9.07	12.18	-	-	0.11	ND	-	-	36.4	-	ND	-	1.24	0.614	ND	-	-
OF-148	Unnamed Tributary to Steep Hill Brook	5/1/2019	12.2	215	0.41	6.10	9.32	-	-	ND	ND	-	-	<1.0	ND	0.026	-	-	-	-	-	-
OF-323	Unnamed Tributary to Steep Hill Brook	5/1/2019	12.8	221	0.56	6.60	17.75	-	-	ND	ND	-	-	<1.0	ND	0.026	-	-	-	-	-	-
OF-324	Unnamed Tributary to Steep Hill Brook	5/1/2019	12.7	387	0.21	6.56	12.20	-	-	0.17	ND	-	-	<1.0	ND	0.019	-	-	-	-	-	-
		5/21/2021	41.1	407.5	0.20	6.80	7.06	-	-	0.192	-	95	2	<1	-	0.07	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note:
* Indicates samples that were analyzed with the holding time exceeded for the laboratory method required
All sampling was conducted during dry weather
- : Not Tested
ND: Non-detect
Bold, red values exceed contaminant criteria.

Stoughton Outfall Sampling Results
Stoughton, MA
September 2022

			Field Test Results							Analytical Results												
Outfall ID	Discharging Waterbody	Sample Date	Temp. (˚C)	Specific Conductance (µS/cm) *Threshold: 2000*	Salinity (ppt)	pH *Threshold: 6.5-8.0*	DO (mg/L)	Total Chlorine (mg/L) *Threshold: 0.1*	Oxygen Reduction Potential (mV)	Ammonia as Nitrogen (mg/L) *Threshold: 0.5*	Chlorine, TRC (mg/L) *Threshold: 0.1*	Chloride (mg/L)	Fecal Coliform, MF (col/100ml)	E. coli (MPN/100 mL) *Threshold: 236*	Phosphorus, Total (mg/L)	Surfactants, MBAS (mg/L) *Threshold: 0.25*	Biological Oxygen Demand, BOD (mg/L)	Nitrogen, Total (mg/L)	Nitrate as Nitrogen (mg/L)	Nitrite as Nitrogen (mg/L)	Turbidity (NTU)	Total Suspended Solids, TSS (mg/L)
OF-580	Unnamed Tributary to Steep Hill Brook	5/1/2019	13.6	486	0.51	6.40	10.35	-	-	ND	ND	-	-	28.8	ND	0.025	-	-	-	-	-	-
		5/21/2021	12.6	1712	0.87	6.73	6.23	-	-	0.112	-	560	ND	<1	-	ND	-	-	-	-	-	-
OF-322	Woods Pond	5/1/2019	12.4	497	0.68	6.41	11.96	-	-	ND	ND	-	-	1	ND	0.023	-	-	-	-	-	-
		5/21/2021	15.0	499.1	0.24	7.15	6.96	-	-	ND	-	120	ND	<1	-	ND	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-194	Beaver Meadow Brook	5/1/2019	11.2	318	0.54	6.59	10.20	-	-	ND	ND	-	-	47.3	ND	0.023	ND	-	-	ND	-	-
OF-440	Unnamed Tributary to Town Pond	5/18/2021	15.5	329.2	0.16	4.93	7.22	-	-	ND	-	81	82*	63.14*	-	ND	-	-	-	-	2.2	ND
		6/24/2021	-	-	-	-	-	-	-	-	-	-	760	1,203.33	-	-	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-453	Unnamed Tributary to Town Pond	5/21/2021	17.7	153.3	0.07	5.46	6.90	-	-	0.105	-	34	ND	5.16	-	ND	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-788	Brockton Reservoir	5/21/2021	10.2	523	0.25	7.08	7.27	-	-	ND	-	140	ND	<1	-	ND	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-792	Cochato River	5/21/2021	15.5	3,408	1.80	4.81	7.16	-	-	0.109	-	1100	3	<1	-	ND	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-743	Unnamed Wetlands near Lovett Brook	5/18/2021	13.8	1,500	0.76	6.80	6.82	-	-	ND	-	480	ND	<1	-	ND	-	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-587	Unnamed Tributary to Beaver Brook	5/18/2021	14.9	152.4	0.07	5.22	6.17	-	-	ND	-	36	8	29.17	-	ND	2.9	-	-	-	-	-
		7/15/2021	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-545	Unnamed Tributary to Steep Hill Brook	4/13/2022	-	-	-	-	-	-	-	**1.92**	ND	-	70	36.41	0.16	ND	-	-	-	-	-	-
		6/29/2022	18.2	**2104**	1.08	7.01	5.09		-100	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-728	Unnamed Tributary to Steep Hill Brook	4/13/2022	-	-	-	-	-	-	-	0.165	ND	-	15	16.94	0.017	ND	-	-	-	-	-	-
		6/29/2022	18.6	794	0.39	7.44	7.80	-	-1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-806	Unnamed Tributary to Beaver Brook	4/13/2022	-	-	-	-	-	-	-	ND	ND	-	ND	1	0.046	ND	-	-	-	-	-	-
		6/29/2022	24.5	649	0.08	7.31	4.76	-	-140	-	-	-	-	-	-	-	-	-	-	-	-	-
OF-793	Unnamed Tributary to Steep Hill Brook	7/1/2022	18.5	1273	0.64	7.42	6.90	-	-84	0.12	ND	-	**1553.12**	**1986.29**	0.02	ND	-	-	-	-	-	-

Note:
* Indicates samples that were analyzed with the holding time exceeded for the laboratory method required
All sampling was conducted during dry weather
- : Not Tested
ND: Non-detect
Bold, red values exceed contaminant criteria.

CERTIFICATE OF ANALYSIS

Natalie Pommersheim
Environmental Partners Group
18 Commerce Way Ste 2000
Woburn, MA 01801

RE: FY19 MS4 Services - Stoughton (R282-1801)
ESS Laboratory Work Order Number: 1905038

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:42 pm, May 09, 2019

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

Analytical Balance - Middleboro, MA	Surfactants
BAL Laboratory - Cranston, RI	E Coli

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905038

SAMPLE RECEIPT

The following samples were received on May 01, 2019 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Lab Number	Sample Name	Matrix	Analysis
1905038-01	OF-323	Storm Water	350.1, 365.1, 4500Cl G, SM9223B, SUB
1905038-02	OF-322	Storm Water	350.1, 365.1, 4500Cl G, SM9223B, SUB
1905038-03	OF-324	Storm Water	350.1, 365.1, 4500Cl G, SM9223B, SUB
1905038-04	OF-148	Storm Water	350.1, 365.1, 4500Cl G, SM9223B, SUB
1905038-05	OF-580	Storm Water	350.1, 365.1, 4500Cl G, SM9223B, SUB
1905038-06	OF-194	Storm Water	350.1, 365.1, 4500Cl G, 5210 B, SM9223B, SUB
1905038-07	OF-455	Storm Water	350.1, 4500Cl G, 5210 B, SM9223B, SUB

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton ESS Laboratory Work Order: 1905038

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905038

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-323
Date Sampled: 05/01/19 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-01
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/02/19 18:50	mg/L	CE90220
Total Phosphate as P	**0.12** (0.10)		365.1		1	EEM	05/02/19 16:24	mg/L	CE90214
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-323
Date Sampled: 05/01/19 10:45
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-01
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.011** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-323
Date Sampled: 05/01/19 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-01
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**< 1.0** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-322
Date Sampled: 05/01/19 11:15
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-02
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/02/19 18:51	mg/L	CE90220
Total Phosphate as P	ND (0.10)		365.1		1	EEM	05/02/19 16:25	mg/L	CE90214
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-322
Date Sampled: 05/01/19 11:15
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-02
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.023** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-322
Date Sampled: 05/01/19 11:15
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-02
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**1.0** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-324
Date Sampled: 05/01/19 11:40
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-03
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	**0.17** (0.10)		350.1		1	JLK	05/02/19 18:52	mg/L	CE90220
Total Phosphate as P	ND (0.10)		365.1		1	EEM	05/02/19 16:27	mg/L	CE90214
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-324
Date Sampled: 05/01/19 11:40
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-03
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.019** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-324
Date Sampled: 05/01/19 11:40
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-03
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**< 1.0** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-148
Date Sampled: 05/01/19 13:05
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-04
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/02/19 18:52	mg/L	CE90220
Total Phosphate as P	ND (0.10)		365.1		1	EEM	05/02/19 16:28	mg/L	CE90214
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-148
Date Sampled: 05/01/19 13:05
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-04
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.026** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-148
Date Sampled: 05/01/19 13:05
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-04
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**< 1.0** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-580
Date Sampled: 05/01/19 13:40
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-05
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/02/19 18:53	mg/L	CE90220
Total Phosphate as P	ND (0.10)		365.1		1	EEM	05/02/19 16:29	mg/L	CE90214
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-580
Date Sampled: 05/01/19 13:40
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-05
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.025** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-580
Date Sampled: 05/01/19 13:40
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-05
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**28.8** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-194
Date Sampled: 05/01/19 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-06
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/02/19 18:54	mg/L	CE90220
Biochemical Oxygen Demand	ND (3)		5210 B		1	LAB	05/02/19 17:30	mg/L	CE90218
Total Phosphate as P	ND (0.10)		365.1		1	EEM	05/02/19 16:30	mg/L	CE90214
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-194
Date Sampled: 05/01/19 14:15
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-06
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.023** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-194
Date Sampled: 05/01/19 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-06
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**47.3** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-455
Date Sampled: 05/01/19 14:30
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-07
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/02/19 18:55	mg/L	CE90220
Biochemical Oxygen Demand	ND (3)		5210 B		1	LAB	05/02/19 17:30	mg/L	CE90218
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/01/19 20:30	mg/L	CE90131

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-455
Date Sampled: 05/01/19 14:30
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-07
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/3/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.036** (0.002)		SUB		1	SUB	05/03/19 0:00	mg/L	CE90925

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-455
Date Sampled: 05/01/19 14:30
Percent Solids: N/A

ESS Laboratory Work Order: 1905038
ESS Laboratory Sample ID: 1905038-07
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**2.0** (N/A)		SM9223B		RAS	05/02/19 9:00	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE90131 - General Preparation										
Blank										
Total Residual Chlorine	ND	0.06	mg/L							
LCS										
Total Residual Chlorine	0.40		mg/L	0.3999		99	80-120			
Batch CE90214 - TPO4 Prep										
Blank										
Total Phosphate as P	ND	0.10	mg/L							
LCS										
Total Phosphate as P	0.51	0.10	mg/L	0.5000		102	90-110			
Batch CE90218 - BOD Prep										
LCS										
Biochemical Oxygen Demand	172		mg/L	200.0		86	84.6-115.4			
Batch CE90220 - NH4 Prep										
Blank										
Ammonia as N	ND	0.10	mg/L							
LCS										
Ammonia as N	0.12	0.10	mg/L	0.09994		117	80-120			
LCS										
Ammonia as N	1.15	0.10	mg/L	0.9994		115	80-120			

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton ESS Laboratory Work Order: 1905038

Notes and Definitions

U	Analyte included in the analysis, but not detected
<	Less than the Method Detection Limit.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905038

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 10:45
LOCATION: 1905038
1

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935240-01**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.011**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 11:15
LOCATION: 1905038 2

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935240-02**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.023**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 11:40
LOCATION: 1905038 3

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935240-03**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.019**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 13:05
LOCATION: 1905038 4

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935240-04**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.026**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 13:40
LOCATION: 1905038 5

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935240-05**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.025**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 14:15
LOCATION: 1905038 6

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935240-06**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.023**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 14:30
LOCATION: 1905038 7

REPORTED: 05/07/2019
ORDER #: G1935240
SAMPLE DATE: 5/2/2019
DATE RECEIVED: 5/2/2019
SAMPLE ID: Grab
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#:** **1935240-07**	
Surfactants (MBAS)	Hach 8028	05/03/2019	mg/L	0.002	**0.036**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

NA = Not Applicable
ND = Not Detected
'<' = Less Than
'*' = Detection Limit

Amanda Cronin

Digitally signed by Amanda Cronin
CN=Amanda Cronin
O=Analytical Balance Corp.
E=amanda@h2otest.net
2.5.4.11=
Date: 2019.05.07 13:32:57

Approved By: _____
Lab Manager / Date

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

Analytical Balance

CHAIN OF CUSTODY

ESS Lab # 1905038

Turn Time X Standard Other_____

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Electonic Deliverables Excel Access PDF

Co. Name	Project #	Project Name	PO #
ESS Laboratory		1905038	B02787

Contact Person	Proj. Location
Shawn Morrell	

Address	City , State	Zip	

Tel.	email:
ext 3083	smorrell@thielsch.com

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis		Surfactants							
	5/1/19	1045	G	SW *	1905038-01	1	1	AG	1L			X							
	5/1/19	1115	G	SW *	1905038-02	1	1	AG	1L			X							
	5/1/19	1140	G	SW *	1905038-03	1	1	AG	1L			X							
	5/1/19	1305	G	SW *	1905038-04	1	1	AG	1L			X							
	5/1/19	1340	G	SW *	1905038-05	1	1	AG	1L			X							
	5/1/19	1415	G	SW *	1905038-06	1	1	AG	1L			X							
	5/1/19	1430	G	SW *	1905038-07	1	1	AG	1L			X							
					*Matrix = Stormwater	(hdm 5/6/19)													

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: **Please send Sample Confirmation after samples have been received to Heather Masse - hmasse@thielsch.com**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
R. Carlson 5/2/19 14:38	Amanda Lus 5/2 238		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

BAL

C905013

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # ~~1904038~~ 1905038

Turn Time: (5) Days

Reporting Limits: 05/02/19

Regulatory State

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables: ☑ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name	Project #	Project Name
Environmental Partners Group, Inc.	R982-1801	FY19 MS4 Services - Stoughton

Contact Person	Address
Natalie Pommersheim	1900 Crown Colony Drive

City	State	Zip Code	PO #
Quincy	MA	02169	

Telephone Number	FAX Number	Email Address
617-657-0257		nmp@environpartners.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chlorine (TRC)	BOD	NO2	NO3	E. coli	Surfactants	Fecal coliform	Turbidity
1	5/1/19	1045	G	SW	OF-323	X	P		X				X	X		
2	5/1/19	1115	G	SW	OF-322	X	P		X				X	X		
3	5/1/19	1140	G	SW	OF-324	X	P		X				X	X		
4	5/1/19	1305	G	SW	OF-148	X	P		X				X	X		
5	5/1/19	1340	G	SW	OF-580	X	P		X				X	X		
6	5/1/19	1415	G	SW	OF-194	X	X		X	X			X	X		
7	5/1/19	1430	G	SW	OF-455	X			X	P			X	X		

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — P P P P P P P S AG S

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 6 6 6 6 6 6 6 1 6 1

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 3 3 3 1 1 1 1 1 1 1

Number of Containers per Sample: 1 1 1 1 1 1 1 1 1 1

Laboratory Use Only

Cooler Present: ✓ ○ Drop Off

Seals Intact: ○ ✓ Pickup

Cooler Temperature: 0.8+0.9 °C ICE 2C

Sampled by: Marissa Carvalho

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/1/19 1454	5/1/19 1454	5/1/19 1815	5/1/19 1957
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
050219 842	050219 842		

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 904038

Turn Time: 5 Days
Regulatory State
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits
Electonic Deliverables: ☑ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name: Environmental Partners Group, Inc.
Project #: P982-1801
Project Name: FY19 MS4 services - Stoughton
Contact Person: Natalie Pommersheim
Address: 1900 Crown Colony Drive
City: Quincy
State: MA
Zip Code: 02169
PO #:
Telephone Number: 617-657-0257
FAX Number:
Email Address: nmp@environpartners.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	TDHal Phosphorus	Total Nitrogen	Chlorine (TRC)	BOD	NO2	NO3	E. coli	Surfactants	Fecal coliform	Turbidity
1	5/1/19	1045	G	SW	OF-323	X	P		X				X	X		
2	5/1/19	1115	G	SW	OF-322	X	P		X				X	X		
3	5/1/19	1140	G	SW	OF-324	X	P		X				X	X		
4	5/1/19	1305	G	SW	OF-148	X	P		X				X	X		
5	5/1/19	1340	G	SW	OF-580	X	P		X				X	X		
6	5/1/19	1415	G	SW	OF-194	X	X		X	X			X	X		
7	5/1/19	1430	G	SW	OF-455	X			X	P			X	X		

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — P P P P P P P S AG S
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 6 6 6 6 6 6 6 1 6 1
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 3 3 3 1 1 1 1 1 1 1
Number of Containers per Sample: 1 1 1 1 1 1 1 1 1 1

Laboratory Use Only
Cooler Present: ✓ ○ Drop Off
Seals Intact: ① Pickup
Cooler Temperature: 0.8+0.9 °C ICE 2C

Sampled by: Marissa Carvalho
Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/1/19 1454	R Carlson 5/1/19 1454	R Carlson 5/1/19 1815	5/1/19 1957
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
05.02.19 842	05.02.19 842		

CERTIFICATE OF ANALYSIS

Natalie Pommersheim
Environmental Partners Group
18 Commerce Way Ste 2000
Woburn, MA 01801

RE: FY19 MS4 Services - Stoughton (R282-1801)
ESS Laboratory Work Order Number: 1905509

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:10 pm, May 29, 2019

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

Analytical Balance - Middleboro, MA	Surfactants
BAL Laboratory - Cranston, RI	E Coli

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905509

SAMPLE RECEIPT

The following samples were received on May 15, 2019 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Lab Number	Sample Name	Matrix	Analysis
1905509-01	OF-113	Storm Water	350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905509-02	OF-756	Storm Water	350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905509-03	OF-203	Storm Water	180.1, 350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905509-04	OF-202	Storm Water	180.1, 350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton ESS Laboratory Work Order: 1905509

PROJECT NARRATIVE

Classical Chemistry

1905509-01	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905509-02	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905509-03	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905509-04	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905509

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-113
Date Sampled: 05/15/19 12:26
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-01
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/16/19 17:26	mg/L	CE91552
Nitrate as N	**2.11** (0.110)		353.2		5	JLK	05/15/19 21:50	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/15/19 20:05	mg/L	CE91546
Total Nitrogen	**2.57** (0.20)		4500N		5	JLK	05/17/19 16:49	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/15/19 17:25	mg/L	CE91558

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-113
Date Sampled: 05/15/19 12:26
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-01
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/17/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.023** (0.006)		SUB		1	SUB	05/17/19 0:00	mg/L	CE92234

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-113
Date Sampled: 05/15/19 12:26
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-01
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**10.9** (N/A)		SM9223B		CCC	05/15/19 16:30	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-756
Date Sampled: 05/15/19 12:45
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-02
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/16/19 17:27	mg/L	CE91552
Nitrate as N	**0.283** (0.030)		353.2		1	JLK	05/15/19 21:32	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/15/19 20:06	mg/L	CE91546
Total Nitrogen	**0.76** (0.20)		4500N		1	JLK	05/17/19 16:56	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/15/19 17:25	mg/L	CE91558

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-756
Date Sampled: 05/15/19 12:45
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-02
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/17/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.012** (0.006)		SUB		1	SUB	05/17/19 0:00	mg/L	CE92234

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-756
Date Sampled: 05/15/19 12:45
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-02
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**4.1** (N/A)		SM9223B		CCC	05/15/19 16:30	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-203
Date Sampled: 05/15/19 13:31
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-03
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/16/19 17:28	mg/L	CE91552
Nitrate as N	**0.276** (0.030)		353.2		1	JLK	05/15/19 21:33	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/15/19 20:07	mg/L	CE91546
Total Nitrogen	**1.45** (0.20)		4500N		1	JLK	05/17/19 16:56	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/15/19 17:25	mg/L	CE91558
Turbidity	**35.7** (1.0)		180.1		1	CCP	05/15/19 17:30	NTU	CE91543

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-203
Date Sampled: 05/15/19 13:31
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-03
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/17/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.027** (0.006)		SUB		1	SUB	05/17/19 0:00	mg/L	CE92234

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-203
Date Sampled: 05/15/19 13:31
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-03
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**2.0** (N/A)		SM9223B		CCC	05/15/19 16:30	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-202
Date Sampled: 05/15/19 13:55
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-04
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/16/19 17:29	mg/L	CE91552
Nitrate as N	**0.603** (0.030)		353.2		1	JLK	05/15/19 21:34	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/15/19 20:08	mg/L	CE91546
Total Nitrogen	**1.08** (0.20)		4500N		1	JLK	05/17/19 16:57	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/15/19 17:25	mg/L	CE91558
Turbidity	ND (1.0)		180.1		1	CCP	05/15/19 17:30	NTU	CE91543

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-202
Date Sampled: 05/15/19 13:55
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-04
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/17/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.011** (0.006)		SUB		1	SUB	05/17/19 0:00	mg/L	CE92234

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-202
Date Sampled: 05/15/19 13:55
Percent Solids: N/A

ESS Laboratory Work Order: 1905509
ESS Laboratory Sample ID: 1905509-04
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**1.0** (N/A)		SM9223B		CCC	05/15/19 16:30	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905509

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE91543 - General Preparation										
Blank										
Turbidity	ND	1.0	NTU							
LCS										
Turbidity	4.0		NTU	4.000		100	90-110			
Batch CE91546 - General Preparation										
Blank										
Nitrite as N	ND	0.010	mg/L							
Nitrite as N	ND	0.010	mg/L							
LCS										
Nitrite as N	0.258		mg/L	0.2497		103	90-110			
Nitrite as N	0.258		mg/L	0.2497		103	90-110			
Batch CE91547 - General Preparation										
Blank										
Nitrate/Nitrite as N	ND	0.020	mg/L							
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS										
Nitrate/Nitrite as N	0.496		mg/L	0.5000		99	90-110			
Nitrate/Nitrite as N	0.496		mg/L	0.5000		99	90-110			
Batch CE91552 - NH4 Prep										
Blank										
Ammonia as N	ND	0.10	mg/L							
LCS										
Ammonia as N	0.10	0.10	mg/L	0.09994		103	80-120			
LCS										
Ammonia as N	1.16	0.10	mg/L	0.9994		116	80-120			
Batch CE91558 - General Preparation										
Blank										
Total Residual Chlorine	ND	0.06	mg/L							
LCS										
Total Residual Chlorine	0.39		mg/L	0.3999		98	80-120			
Batch CE91724 - TKN Prep										
Blank										
Total Kjeldahl Nitrogen as N	ND	0.20	mg/L							
LCS										
Total Kjeldahl Nitrogen as N	3.97	0.20	mg/L	3.490		114	80-120			

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton ESS Laboratory Work Order: 1905509

Notes and Definitions

U	Analyte included in the analysis, but not detected
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905509

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

Environmental Chemistry
Site Assessment
Quality Assurance Services

Environmental Services
Site Sampling
Data Auditing

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 12:26
LOCATION: 1905509-01

REPORTED: 05/21/2019
ORDER #: G1935703
SAMPLE DATE: 5/15/2019
DATE RECEIVED: 5/16/2019
SAMPLE ID: 1905509
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935703-01**	
Surfactants (MBAS)	Hach 8028	05/17/2019	mg/L	0.006	**0.023**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 12:45
LOCATION: 1905509-02

REPORTED: 05/21/2019
ORDER #: G1935703
SAMPLE DATE: 5/15/2019
DATE RECEIVED: 5/16/2019
SAMPLE ID: 1905509
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935703-02**	
Surfactants (MBAS)	Hach 8028	05/17/2019	mg/L	0.006	**0.012**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 13:31
LOCATION: 1905509-03

REPORTED: 05/21/2019
ORDER #: G1935703
SAMPLE DATE: 5/15/2019
DATE RECEIVED: 5/16/2019
SAMPLE ID: 1905509
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#:** **1935703-03**	
Surfactants (MBAS)	Hach 8028	05/17/2019	mg/L	0.006	**0.027**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

CERTIFICATE OF ANALYSIS

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

COLLECTED BY: Customer
TIME: 13:55
LOCATION: 1905509-04

REPORTED: 05/21/2019
ORDER #: G1935703
SAMPLE DATE: 5/15/2019
DATE RECEIVED: 5/16/2019
SAMPLE ID: 1905509
DESCRIPTION: WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	Result
Test Parameters				**LAB-ID#: 1935703-04**	
Surfactants (MBAS)	Hach 8028	05/17/2019	mg/L	0.006	**0.011**

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022).

NA = Not Applicable
ND = Not Detected
'<' = Less Than
'*' = Detection Limit

Approved By: _____
Lab Manager / Date

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

Analytical Balance

CHAIN OF CUSTODY

ESS Lab # 1905509

Turn Time **X** Standard Other_____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables Excel Access PDF

Co. Name	Project #	Project Name
ESS Laboratory		1905509

Contact Person	Proj. Location
Shawn Morrell	

Address	City , State	Zip	PO #
			B02787

Tel.	email:
ext 3083	smorrell@thielsch.com

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis		Surfactants							
1	5/15/19	1226	g	Aq*	1905509-01							x							
2	5/15/19	1245	g	Aq*	1905509-02							x							
3	5/15/19	1331	g	Aq*	1905509-03							x							
4	5/15/19	1355	g	Aq*	1905509-04							x							

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Aq = Stormwater**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
R Carlson 5/16/19 1253	Erin McElwee 5/16/19 12:53		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

(1905161

CHAIN OF CUSTODY

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

ESS Lab # 1905509
Reporting Limits
Electonic Deliverables ☐ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Turn Time: 5 Days
Regulatory State
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Company Name: Environmental Partners Group, Inc.
Project #: R282-1801
Project Name: FY19 - MS4 Services (Stoughton)
Contact Person: Natalie Pommersheim
Address: 1900 Crown Colony Dr.
City: Quincy
State: MA
Zip Code: 02169
PO #:
Telephone Number: 617-657-0257
FAX Number:
Email Address: nmp@envpartners.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chloride (TRC)	BOD	NO2	NO3	E.coli	Surfactants	Fecal Coliform	Turbidity
1	5/15/19	1226	G	Stormwater	OF-113	X		X	X		X	X	X	X		
2	5/15/19	1245	G	Stormwater	OF-756	X		X	X		X	X	X	X		
~~5/15/19~~	~~1310~~		~~G~~	~~Stormwater~~	~~OF-744~~	X		X	X		X	X	X	X		
3	5/15/19	1331	G	Stormwater	OF-203	X		X	X		X	X	X	X		X
4	5/15/19	1355	G	Stormwater	OF-202	X		X	X		X	X	X	X		X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

P	P	P	P	P	P	P	P	S	AG	S	P					
6	6	6	6	6	6	6	1	6	1	6						
3	3	3	1	1	1	1	1	1	1	1						
1	1	1	1	1	1	1	1	1	1	1						

Number of Containers per Sample:

Laboratory Use Only
Cooler Present: _____ ○ Drop Off ☑ Pickup
Seals Intact: _____
Cooler Temperature: 1.2 °C ICE RC

Sampled by: Marissa Carvalho
Comments: * E.coli samples have a short hold time!
Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/15/19 1413	5/15/19 1413	5/15/19 1548	5/15/19 16:04
5/15/19 1608	5/15/19 1612		

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1905509

Turn Time: 5 Days
Regulatory State
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits
Electonic Deliverables: ☐ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name	Project #	Project Name
Environmental Partners Group, Inc.	R282-1801	FY19 - MS4 Services (Stoughton)
Contact Person	**Address**	
Natalie Pommersheim	1900 Crown Colony Dr.	
City	**State**	**Zip Code** / **PO #**
Quincy	MA	02169
Telephone Number	**FAX Number**	**Email Address**
617-657-0257		nmp@envpartners.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chlorine (TRC)	BOD	NO2	NO3	E.coli	Surfactants	Fecal Coliform	Turbidity
1	5/15/19	1226	G	Stormwater	OF-113	X		X	X		X	X	X	X		
2	5/15/19	1245	G	Stormwater	OF-756	X		X	X		X	X	X	X		
~~5/15/19~~	~~1310~~	~~G~~	~~Stormwater~~	~~OF-744~~	~~X~~		~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~		
3	5/15/19	1331	G	Stormwater	OF-203	X		X	X		X	X	X	X		X
4	5/15/19	1355	G	Stormwater	OF-202	X		X	X		X	X	X	X		X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — P P P P P P P S AG S P
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 6 6 6 6 6 6 6 1 6 1 6
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 3 3 3 1 1 (1 1 1 1 1
Number of Containers per Sample: 1 1 1 1 1 1 1 1 1 1 1

Laboratory Use Only
Cooler Present: ____ ○ Drop Off
Seals Intact: ____ ☑ Pickup
Cooler Temperature: 1.2 °C ICE RC

Sampled by: Marissa Carvalho

Comments: Please specify "Other" preservative and containers types in this space
* E.coli samples have a short hold time!

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/15/19 1413	R Carlson 5/15/19 1413	R Carlson 5/15/19 1548	5/15/19 16:04
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Natalie Pommersheim
Environmental Partners Group
18 Commerce Way Ste 2000
Woburn, MA 01801

RE: FY19 MS4 Services - Stoughton (R282-1801)
ESS Laboratory Work Order Number: 1905342

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 12:33 pm, Jun 05, 2019

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

BAL Laboratory - Cranston, RI	E Coli
New England Testing Laboratory, Inc. - West Warwick, RI	Surfactants

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905342

SAMPLE RECEIPT

The following samples were received on May 09, 2019 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Revision 1 June 5, 2019: This report has been revised to include Chlorine analysis for 1905342-07.

Lab Number	Sample Name	Matrix	Analysis
1905342-01	Island	Storm Water	350.1, 365.1, 4500Cl G, 5210 B, SM9223B, SUB
1905342-02	Bailey	Storm Water	350.1, 365.1, 4500Cl G, 5210 B, SM9223B, SUB
1905342-03	OF-77	Storm Water	180.1, 350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905342-04	OF-207	Storm Water	180.1, 350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905342-05	OF-378	Storm Water	180.1, 350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905342-06	OF-464	Storm Water	350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB
1905342-07	OF-211	Storm Water	180.1, 350.1, 353.2, 4500Cl G, 4500N, SM9223B, SUB

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton ESS Laboratory Work Order: 1905342

PROJECT NARRATIVE

Classical Chemistry

1905342-01	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905342-02	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905342-03	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905342-04	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905342-05	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905342-06	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**
1905342-07	**The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905342

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: Island
Date Sampled: 05/09/19 14:05
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-01
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/14/19 16:49	mg/L	CE91416
Biochemical Oxygen Demand	ND (3)		5210 B		1	LAB	05/10/19 16:54	mg/L	CE91019
Total Phosphate as P	**0.12** (0.10)		365.1		1	EEM	05/13/19 16:35	mg/L	CE91046
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/09/19 19:53	mg/L	CE90943

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: Island
Date Sampled: 05/09/19 14:05
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-01
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.050** (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: Island
Date Sampled: 05/09/19 14:05
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-01
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**14.6** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: Bailey
Date Sampled: 05/09/19 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-02
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/14/19 16:52	mg/L	CE91416
Biochemical Oxygen Demand	ND (3)		5210 B		1	LAB	05/10/19 16:54	mg/L	CE91019
Total Phosphate as P	**0.12** (0.10)		365.1		1	EEM	05/13/19 16:36	mg/L	CE91046
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/09/19 19:53	mg/L	CE90943

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: Bailey
Date Sampled: 05/09/19 14:15
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-02
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.100** (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: Bailey
Date Sampled: 05/09/19 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-02
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**27.5** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-77
Date Sampled: 05/09/19 13:25
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-03
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/14/19 16:53	mg/L	CE91416
Nitrate as N	**0.101** (0.030)		353.2		1	JLK	05/10/19 20:51	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/10/19 19:59	mg/L	CE91044
Total Nitrogen	**0.90** (0.20)		4500N		1	JLK	05/15/19 16:48	mg/L	[CALC]
Total Residual Chlorine	**1.87** (0.06)		4500Cl G		1	CCP	05/09/19 19:53	mg/L	CE90943
Turbidity	ND (1.0)		180.1		1	CCP	05/09/19 19:49	NTU	CE90970

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-77
Date Sampled: 05/09/19 13:25
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-03
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	**0.040** (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-77
Date Sampled: 05/09/19 13:25
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-03
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**2.0** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-207
Date Sampled: 05/09/19 10:40
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-04
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/14/19 16:54	mg/L	CE91416
Nitrate as N	**0.292** (0.030)		353.2		1	JLK	05/10/19 20:53	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/10/19 20:02	mg/L	CE91044
Total Nitrogen	**0.84** (0.20)		4500N		1	JLK	05/15/19 16:49	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/09/19 19:53	mg/L	CE90943
Turbidity	**1.1** (1.0)		180.1		1	CCP	05/09/19 19:49	NTU	CE90970

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-207
Date Sampled: 05/09/19 10:40
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-04
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	ND (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-207
Date Sampled: 05/09/19 10:40
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-04
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**< 1.0** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-378
Date Sampled: 05/09/19 12:50
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-05
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/14/19 16:55	mg/L	CE91416
Nitrate as N	ND (0.030)		353.2		1	JLK	05/10/19 20:54	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/10/19 20:03	mg/L	CE91044
Total Nitrogen	**0.58** (0.20)		4500N		1	JLK	05/15/19 16:55	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/09/19 19:53	mg/L	CE90943
Turbidity	ND (1.0)		180.1		1	CCP	05/09/19 19:49	NTU	CE90970

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-378
Date Sampled: 05/09/19 12:50
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-05
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	ND (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-378
Date Sampled: 05/09/19 12:50
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-05
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**1.0** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-464
Date Sampled: 05/09/19 11:09
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-06
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	**0.11** (0.10)		350.1		1	JLK	05/14/19 16:55	mg/L	CE91416
Nitrate as N	**0.614** (0.030)		353.2		1	JLK	05/10/19 20:55	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/10/19 20:04	mg/L	CE91044
Total Nitrogen	**1.24** (0.20)		4500N		1	JLK	05/15/19 16:56	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	CCP	05/09/19 19:53	mg/L	CE90943

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-464
Date Sampled: 05/09/19 11:09
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-06
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	ND (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-464
Date Sampled: 05/09/19 11:09
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-06
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**36.4** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-211
Date Sampled: 05/09/19 11:20
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-07
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	ND (0.10)		350.1		1	JLK	05/14/19 16:56	mg/L	CE91416
Nitrate as N	**0.342** (0.030)		353.2		1	JLK	05/10/19 20:56	mg/L	[CALC]
Nitrite as N	ND (0.010)		353.2		1	JLK	05/10/19 20:05	mg/L	CE91044
Total Nitrogen	**0.80** (0.20)		4500N		1	JLK	05/15/19 16:57	mg/L	[CALC]
Total Residual Chlorine	ND (0.06)		4500Cl G		1	PMH	05/30/19 21:30	mg/L	CE93040
Turbidity	ND (1.0)		180.1		1	CCP	05/09/19 19:49	NTU	CE90970

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-211
Date Sampled: 05/09/19 11:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-07
Sample Matrix: Storm Water

Analyst: SUB
Prepared: 5/10/19 0:00

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Surfactants (MBAS)	ND (0.030)		SUB		1	SUB	05/10/19 0:00	mg/L	CE91727

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton
Client Sample ID: OF-211
Date Sampled: 05/09/19 11:20
Percent Solids: N/A

ESS Laboratory Work Order: 1905342
ESS Laboratory Sample ID: 1905342-07
Sample Matrix: Storm Water

All methods used are in accordance with 40 CFR 136.

Microbiology

Analyte	Results (MRL)	MDL	Method	Limit	Analyst	Analyzed	Units
E.coli	**< 1.0** (N/A)		SM9223B		GSG	05/09/19 16:45	MPN/100mL

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905342

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE90943 - General Preparation										
Blank										
Total Residual Chlorine	ND	0.06	mg/L							
LCS										
Total Residual Chlorine	0.39		mg/L	0.3999		98	80-120			
Batch CE90970 - General Preparation										
Blank										
Turbidity	ND	1.0	NTU							
LCS										
Turbidity	3.9		NTU	4.000		97	90-110			
Batch CE91019 - BOD Prep										
LCS										
Biochemical Oxygen Demand	204		mg/L	200.0		102	84.6-115.4			
Batch CE91044 - General Preparation										
Blank										
Nitrite as N	ND	0.010	mg/L							
Nitrite as N	ND	0.010	mg/L							
LCS										
Nitrite as N	0.248		mg/L	0.2497		99	90-110			
Nitrite as N	0.248		mg/L	0.2497		99	90-110			
Batch CE91045 - General Preparation										
Blank										
Nitrate/Nitrite as N	ND	0.020	mg/L							
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS										
Nitrate/Nitrite as N	0.513		mg/L	0.5000		103	90-110			
Nitrate/Nitrite as N	0.513		mg/L	0.5000		103	90-110			
Batch CE91046 - General Preparation										
Blank										
Total Phosphate as P	ND	0.10	mg/L							
LCS										
Total Phosphate as P	0.51	0.10	mg/L	0.5000		102	90-110			
Batch CE91416 - NH4 Prep										
Blank										
Ammonia as N	ND	0.10	mg/L							
LCS										
Ammonia as N	0.09	0.10	mg/L	0.09994		91	80-120			
LCS										
Ammonia as N	1.14	0.10	mg/L	0.9994		114	80-120			
Batch CE91446 - TKN Prep										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905342

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE91446 - TKN Prep										
Total Kjeldahl Nitrogen as N	ND	0.20	mg/L							
LCS										
Total Kjeldahl Nitrogen as N	3.67	0.20	mg/L	3.490		105	80-120			
Batch CE93040 - General Preparation										
Blank										
Total Residual Chlorine	ND	0.06	mg/L							
LCS										
Total Residual Chlorine	0.38		mg/L	0.3999		94	80-120			

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton ESS Laboratory Work Order: 1905342

Notes and Definitions

U	Analyte included in the analysis, but not detected
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
<	Less than the Method Detection Limit.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Environmental Partners Group
Client Project ID: FY19 MS4 Services - Stoughton

ESS Laboratory Work Order: 1905342

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 9E10003
Client Project: General Project

Report Date: 16-May-2019

Prepared for:

ESS Lab
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted:

The samples listed below were submitted to New England Testing Laboratory on 05/10/19. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 9E10003. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled
9E10003-01	1905342-01	Water	05/09/2019
9E10003-02	1905342-02	Water	05/09/2019
9E10003-03	1905342-03	Water	05/09/2019
9E10003-04	1905342-04	Water	05/09/2019
9E10003-05	1905342-05	Water	05/09/2019
9E10003-06	1905342-06	Water	05/09/2019
9E10003-07	1905342-07	Water	05/09/2019

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

1905342-01

Surfactants (MBAS)	SM5540-C

1905342-02

Surfactants (MBAS)	SM5540-C

1905342-03

Surfactants (MBAS)	SM5540-C

1905342-04

Surfactants (MBAS)	SM5540-C

1905342-05

Surfactants (MBAS)	SM5540-C

1905342-06

Surfactants (MBAS)	SM5540-C

1905342-07

Surfactants (MBAS)	SM5540-C

The analytical methods provided are documented in the following references:

Manual of Methods for Chemical Analysis of Water and Water Wastes, EPA-600/4-79-020 (Revised 1983), USEPA/EMSL.
Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, APHA, AWWA-WPCF.
40 CFR 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, Office of Federal Register National Archives and Records Administration.

Results:

Sample: 1905342-01
9E10003-01 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	**0.05**	0.03	mg/L	05/10/19

Sample: 1905342-02
9E10003-02 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	**0.10**	0.03	mg/L	05/10/19

Sample: 1905342-03
9E10003-03 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	**0.04**	0.03	mg/L	05/10/19

Sample: 1905342-04
9E10003-04 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	ND	0.03	mg/L	05/10/19

Sample: 1905342-05
9E10003-05 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	ND	0.03	mg/L	05/10/19

Sample: 1905342-06
9E10003-06 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	ND	0.03	mg/L	05/10/19

Sample: 1905342-07
9E10003-07 (Water)

General Chemistry

	Result	Reporting Limit	Units	Date Analyzed
MBAS	ND	0.03	mg/L	05/10/19

Case Narrative

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

All samples were analyzed in accordance with 40 CFR 136 approved methodologies.

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9E0483 - Surfactants										
Blank (B9E0483-BLK1)					Date Analyzed: 05/10/19					
MBAS	ND		0.03	mg/L						
LCS (B9E0483-BS1)					Date Analyzed: 05/10/19					
MBAS	1.29		0.03	mg/L	1.20		107	90-110		
LCS (B9E0483-BS2)					Date Analyzed: 05/10/19					
MBAS	1.22		0.03	mg/L	1.20		102	90-110		

9 E 1 0003 R

ESS Laboratory NET

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time X Standard Other_____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables Excel Access PDF

Co. Name: ESS Laboratory	Project #:	Project Name: 1905342	
Contact Person: Shawn Morrell	Proj. Location:		
Address:	City , State:	Zip:	PO #: B02787
Tel.: ext 3083	email: smorrell@thielsch.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis		Surfactants							
	5/9/19	1405	G	SW	1905342-01	1	1	AG	1L			X							
	5/9/19	1415	G	SW	1905342-02	1	1	AG	1L			X							
	5/9/19	1325	G	SW	1905342-03	1	1	AG	1L			X							
	5/9/19	1040	G	SW	1905342-04	1	1	AG	1L			X							
	5/9/19	1250	G	SW	1905342-05	1	1	AG	1L			X							
	5/9/19	1109	G	SW	1905342-06	1	1	AG	1L			X							
	5/9/19	1120	G	SW	1905342-07	1	1	AG	1L			X							

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: 4°

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: **Please send Sample Confirmation after samples have been received to Heather Masse - hmasse@thielsch.com**

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
5/10/19 900	5/10/19 900 am		
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

AA

BNL

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Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1905342

Turn Time: 5 Days
Regulatory State:
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits:
Electonic Deliverables: ☐ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name	Project #	Project Name
Environmental Partners Group, Inc.	P-282-1801	FY19 - MS4 Services (Stoughton)

Contact Person	Address
Natalie Pommersheim	1900 Crown Colony Dr.

City	State	Zip Code	PO #
Quincy	MA	02169	

Telephone Number	FAX Number	Email Address
617-657-0257		nmp@envpartner.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chlorine	BOD	NO2	NO3	E. coli	Surfactants	Fecal Coliform	Turbidity
	5/9/19	1405	G	Storm Water	[redacted] Island	X	X		X	X			X	X	X	
		1415			Bailey	X	X		X	X			X	X	X	
		1325			OF-77	X		X	X		X	X	X	X		X
		1040			OF-207	X		X	X		X	X	X	X		X
		1250			OF-378	X		X	X		X	X	X	X		X
		1109			OF-464	X		X	X		X	X	X	X		
		1120			OF-211	X		X			X	X	X	X		X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial	P	P	P	P	P	P	P	S	AG	S	P					
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	6	6	6	6	6	6	6	1	6	1	6					
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*	3	3	3	1	1	1	1	1	1	1	1					
Number of Containers per Sample:	1	1	1	1	1	1	1	1	1	1	1					

Laboratory Use Only
Cooler Present: ____ ○ Drop Off
Seals Intact: ____ ⓟ Pickup
Cooler Temperature: 0.6+0.9 °C ICE RC

Sampled by: Marissa Carvalho

Comments: Please specify "Other" preservative and containers types in this space
E.coli samples - short hold time!

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/9/19 1449	R Carlos 5/9/19 1449	R Carlos 5/9/19 1632	5/9/19 1630
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
5/9/19 16:32	05/09/19 1632		

ESS Laboratory

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185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1905342

Turn Time	5 Days
Regulatory State	
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Reporting Limits	
Electonic Deliverables	☐ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name	Project #	Project Name
Environmental Partners Group, Inc.	P-282-1801	FY19-MS4 Services (Stoughton)
Contact Person	**Address**	
Natalie Pommersheim	1900 Crown Colony Dr.	
City	**State**	**Zip Code** / **PO #**
Quincy	MA	02169
Telephone Number	**FAX Number**	**Email Address**
617-657-0257		nmp@envpartners.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chlorine	BOD	NO2	NO3	E. coli	Surfactants	Fecal Coliform	Turbidity
1	5/9/19	1405	G	Storm Water	[redacted] Island	X	X		X	X			X	X	X	
2		1415			Bailey-	X	X		X	X			X	X	X	
3		1325			OF-77	X		X	X		X	X	X	X		X
4		1040			OF-207	X		X	X		X	X	X	X		X
5		1250			OF-378	X		X	X		X	X	X	X		X
6		1109			OF-464	X		X	X		X	X	X	X		
7		1120			OF-211	X		X	X		X	X	X	X		X

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	P	P	P	P	P	P	P	S	AG	S	P
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	6	6	6	6	6	6	6	1	6	1	6
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	3	3	3	1	1	1	1	1	1	1	1
											Number of Containers per Sample:	1	1	1	1	1	1	1	1	1	1	1

Laboratory Use Only

Cooler Present: _____ ○ Drop Off
Seals Intact: _____ ⊘ Pickup
Cooler Temperature: 0.6+0.9 °C ICE RC

Sampled by: Marissa Carvalho

Comments: Please specify "Other" preservative and containers types in this space

E.coli samples -short hold time! Chlorine added for sample -07 5/30/19 - PRB

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/9/19 1447	RCarlos 5/9/19 1449	RCarlos 5/9/19 1632	5/9/19 1630
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
	05 09 19 GJC		

Fecal canclled per client - ML 5/17/19

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www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1905342

Turn Time	5 Days
Regulatory State	
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Reporting Limits	
Electonic Deliverables	☐ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name	Project #	Project Name
Environmental Partners Group, Inc.	P-282-1801	FY19-MS4 Services (Stoughton)
Contact Person	**Address**	
Natalie Pommersheim	1900 Crown Colony Dr.	
City	**State**	**Zip Code** / **PO #**
Quincy	MA	02169
Telephone Number	**FAX Number**	**Email Address**
617-657-0257		nmp@envpartners.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chlorine	BOD	NO2	NO3	E. coli	Surfactants	Fecal Coliform	Turbidity					
1	5/9/19	1405	G	Storm Water	[redacted] Island	X	X		X	X			X	X	X						
2		1415			Bailey-	X	X		X	X			X	X	X						
3		1325			OF-77	X		X	X		X	X	X	X		X					
4		1040			OF-207	X		X	X		X	X	X	X		X					
5		1250			OF-378	X		X	X		X	X	X	X		X					
6		1109			OF-464	X		X	X		X	X	X	X							
7		1120			OF-211	X		X			X	X	X	X		X					

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial		P	P	P	P	P	P	P	S	AG	S	P					
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*		6	6	6	6	6	6	6	1	6	1	6					
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*		3	3	3	1	1	1	1	1	1	1	1					
											Number of Containers per Sample:		1	1	1	1	1	1	1	1	1	1	1					

Laboratory Use Only

Cooler Present: _____ ○ Drop Off
Seals Intact: _____ ⊘ Pickup
Cooler Temperature: 0.6+0.9 °C ICE RC

Sampled by: Marissa Carvalho

Comments: Please specify "Other" preservative and containers types in this space
E.coli samples - short hold time!

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/9/19 1447	R Carlos 5/9/19 1449	R Carlos 5/9/19 1632	5/9/19 1630
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
	05 09 19 GJC		

Fecal canclled per client - ML 5/17/19

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Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1905342

Turn Time: 5 Days
Regulatory State
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits
Electonic Deliverables: ☐ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name: Environmental Partners Group, Inc.
Project #: P-282-1801
Project Name: FY19 - MS4 Services (Stoughton)
Contact Person: Natalie Pommersheim
Address: 1900 Crown Colony Dr.
City: Quincy
State: MA
Zip Code: 02169
PO #:
Telephone Number: 617-657-0257
FAX Number:
Email Address: nmp@envpartners.com

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia Nitrogen	Total Phosphorus	Total Nitrogen	Chlorine	BOD	NO2	NO3	E. coli	Surfactants	Fecal Coliform	Turbidity
1	5/9/19	1405	G	Storm Water	[redacted] Island	X	X		X	X			X	X	X	
2		1415			Bailey-	X	X		X	X			X	X	X	
3		1325			OF-77	X		X	X		X	X	X	X		X
4		1040			OF-207	X		X	X		X	X	X	X		X
5		1250			OF-378	X		X	X		X	X	X	X		X
6		1109			OF-464	X		X	X		X	X	X	X		
7		1120			OF-211	X		X			X	X	X	X		X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial						P	P	P	P	P	P	P	S	AG	S	P
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*						6	6	6	6	6	6	6	1	6	1	6
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*						3	3	3	1	1	1	1	1	1	1	1
Number of Containers per Sample:						1	1	1	1	1	1	1	1	1	1	1

Laboratory Use Only
Cooler Present: _____ ○ Drop Off
Seals Intact: _____ ⓟ Pickup
Cooler Temperature: 0.6+0.9 °C ICE RC

Sampled by: Marissa Carvalho
Comments: Please specify "Other" preservative and containers types in this space
E.coli samples - short hold time!

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
M Carvalho 5/9/19 1447	R Carlos 5/9/19 1449	R Carlos 5/9/19 1632	5/9/19 1630
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
	05091900 GJC		

Environmental Partners GROUP

A partnership for engineering solutions

Technical Memorandum

Date 06/18/2019

To Craig Horsfall, P.E. – Assistant Town Engineer, Town of Stoughton

From Natalie Pommersheim – Senior Project Scientist, Environmental Partners

CC Marc Tisdelle, P.E. – Town Engineer, Town of Stoughton

Thomas Fitzgerald – Superintendent, Town of Stoughton

Marissa Carvalho – Environmental Scientist, Environmental Partners

File

Subject Illicit Discharge Detection & Elimination (IDDE) Investigations

FY19 Stormwater Services for the Engineering Department

This memorandum summarizes the 2019 Outfall Sampling Program, outlined in Task 2 of the General Services Agreement – Letter of Understanding Task Order No. 22 for FY19 Stormwater Services for the Engineering Department of the Town of Stoughton.

Under this task, Environmental Partners Group, Inc. (EP) conducted outfall sampling over the course of three (3) days in May 2019. A total of sixty-five (65) outfalls were screened, of which sixteen (16) were found flowing during dry weather. In addition, two (2) surface water samples were collected from the East branch of the Neponset River, upstream and downstream of the Greenbrook II Apartments.

OUTFALL SAMPLING

On May 1, 9 and 15, 2019, EP and Stoughton Public Works staff visited sixty-five (65) outfalls during dry weather, approximately 25% of the 219 total identified MS4 outfalls in the Town of Stoughton. These outfalls were selected based on proximity (less than 100 feet) of a Category 5 waterbody, or tributaries to a Category 5 waterbody, as identified in the 2014 List of Integrated Waters. The Category 5 waterbodies receiving MS4 outfall discharges include Ames Long Pond, two (2) Unnamed Tributaries to Ames Long Pond, Beaver Meadow Brook, two (2) Unnamed Tributaries to Beaver Meadow Brook, the East branch of the Neponset River, Unnamed Tributary MA73-32, an Unnamed Tributary to Unnamed Tributary MA73-32 and Steep Hill Brook. Although Dorchester Brook is not a Category 5 waterbody, the two (2) outfalls discharging to Dorchester Brook were screened due to evidence of E.coli contamination from past sampling events. The two (2) surface water locations on the East branch of the Neponset River were

selected upstream and downstream of private apartment complex Greenbrook II in order to confirm that the water quality in the river is being impacted by discharges from private property rather than Town owned property. The complete list of all sixty-seven (67) screening locations is attached as *Table 1: Outfalls and Surface Water Sampling Locations* and all locations are shown on *Figure 1: Stoughton Sampling Locations*.

Throughout the outfall screening process, EP staff made the following observations:

- OF-322 and OF-323 (both flowing) off Kotlik Street were sampled from upstream manholes for accessibility, and flow was observed from two separate incoming pipes in each of these manholes.
- Connectivity from OF-465 off Winslow Drive is unclear, potentially a buried manhole in the area.
- At Grove Road and Glen Echo Boulevard, EP visited OF-286 that was not flowing, but it should be noted that there was a strong sewer odor in the stream/culvert nearby, and there were suds/bubbles near the culvert outlet. See attached map.
- OF-545, previously sampled off Wheeler Circle (high E.coli concentrations), was just barely dripping and always has orange residue surrounding the outfall. This area is not maintained by the Town (according to DPW staff), but the ownership in GIS is listed as public.
- OF-200, previously sampled off Ethyl Drive, was flowing into Steep Hill Brook and has been sampled in the past (high E.coli concentrations). This area is not maintained by the Town (according to DPW staff), but the ownership in GIS is listed as public.
- OF-464 behind 45 Crockett Street (which discharges to Dorchester Brook) is very difficult to access and therefore it was not possible to perform a visual observation of the pipe end. This outfall was flowing, and a sample was collected using a sampling rod. EP recommends that DPW staff clear this area for follow-up sampling events.
- OF-40 behind the power line easements near 125 Charles Avenue was actually identified as an outlet to an overgrown BMP, and EP recommends that the Town clear this BMP area for follow-up investigations. An additional outlet structure was located that was covered in vegetation and bolted shut.
- EP recommends that the Town coordinate sampling efforts with the Town of Avon for OF-743 and OF-744. Both of these pipes were flowing, however connectivity was observed to be from the Avon drainage system, just along the Town line on Central Street.

RESULTS AND RECOMMENDATIONS

A total of eighteen (18) locations were sampled under this task. All outfalls and surface water locations were analyzed in the field for pH, temperature, specific conductance, salinity, dissolved oxygen. All samples were analyzed for ammonia, chlorine, E.coli and surfactants at certified laboratory, ESS Laboratory, in Cranston, Rhode Island. Additional sampling parameters were applied to outfalls discharging to waterbodies with TMDL requirements, such as nitrogen, turbidity, fecal coliform, BOD, and phosphorus. A summary of the field and analytical results is presented in *Table 2: Stormwater Field Screening and Analytical Results*. Additional sampling parameters are also shown in Table 2.

All outfall sampling results were below reporting limits, other than specific conductance and pH. EP recommends selecting another 25% of MS4 outfalls (55) for FY20 to continue with the sampling program and permit compliance.

In accordance with the General Services Agreement, EP also verified the outfall structure information including material, size, condition, flow connectivity, receiving waterbody, and headwall type. The updated survey data has been incorporated into the Town's existing GIS and an updated geodatabase will be submitted to the Town via Dropbox. An observation log of all structures screened and sampled under this Task is included in *Table 3: Outfall Observation Log.*

Attachments:

Table 1: Outfalls and Surface Water Sampling Locations

Table 2: Stormwater Field Screening and Analytical Results

Table 3: Outfall Observation Log

Figure 1: Sampling Locations

Table 1: Outfalls and Surface Water Sampling Locations

Sampled (Flowing) 2019

Screened (Not Flowing) 2019

Waterbody	OF ID	Previously Sampled?	E.coli Results	Map Grid #	Approx. Street Address	Additional Sampling Parameters	Sample Date/Time
Ames Long Pond	OF-77	No		12	1670 West St	*Nitrogen; Turbidity	5/9/2019 13:25
	OF-162	No		5	769 Highland St		
	OF-202	No		8	216 Palisades Circle		5/15/2019 13:55
	OF-203	No		8	1749 West St		5/15/2019 13:31
	OF-204	Apr-15	<10	8	22 Palisades Circle		
	OF-207	Apr-15	10	12	450 Highand Dr		5/9/2019 10:40
	OF-211	Apr-15	<10	8	536 Highand Dr		5/9/2019 11:20
	OF-376	No		8	751 Highland St		
	OF-378	No		8	751 Highland St		5/9/2019 12:50
	OF-547	No		8	145 Lake Dr		
	OF-553	No		8	55 Lake Dr		
	OF-554	No		8	55 Lake Dr		
Beaver Meadow Brook	OF-193	No		82	14 Meadowbrook Ln	**Bacteria (E.coli); Dissolved Oxygen (BOD)	
	OF-194	No		82	14 Meadowbrook Ln		5/1/2019 14:15
	OF-195	No		82	14 Meadowbrook Ln		
Upstream East Branch Neponset River	Surface Water Sample	No		79	275 Bailey St (Canton)	**Bacteria (E.coli); Dissolved Oxygen (BOD); Fecal Coliform	5/9/2019 14:15
Downstream East Branch Neponset River	Surface Water Sample	No		80	372 Island St	**Bacteria (E.coli); Dissolved Oxygen (BOD); Fecal Coliform	5/9/2019 14:05
Unnamed Tributary to Ames Long Pond (1)	OF-159	No		23	10 Walters Way	*Nitrogen	
	OF-351	No		17	115 Walters Way		
Unnamed Tributary to Beaver Meadow Brook (1)	OF-38	No		89	90 Towbridge Cir	**Bacteria (E.coli)	
	OF-39	No		89	102 Deady Ave		
	OF-286	No		89	213 Glen Echo Blvd		
	OF-306	No		89	90 Towbridge Cir		
	OF-334	No		89	102 Deady Ave		
	OF-455	No		89	102 Deady Ave		5/1/2019 14:30
	OF-456	No		89	90 Towbridge Cir		
Unnamed Tributary to Beaver Meadow Brook (2)	OF-395	No		83	25 Darling Way	**Bacteria (E.coli)	
	OF-486	No		83	47 Darling Way		
Unnamed Tributary to Ames Long Pond (2)	OF-249	No		10	Jordan Dr	*Nitrogen	
	OF-250	No		10	Jordan Dr		
	OF-251	No		10	Jordan Dr		
Unnamed Tributary to MA73-32	OF-148	No		49	153 Rogers Dr	**Bacteria (E.coli)	5/1/2019 13:05
	OF-150	No		49	78 Bradford St		
	OF-151	No		49	202 Morton St		
	OF-156	No		57	497 Schhol St		
	OF-322	No		48	176 Kotlik St		5/1/2016 11:15
	OF-323	No		48	98 Kotlik St		5/1/2019 10:45
	OF-324	No		48	70 Kotlik St		5/1/2019 11:40
	OF-350	No		49	14 Dino Dr		
	OF-450	No		48	75 Sheehan St		
	OF-465	No		48	132 Winslow Dr		
	OF-469	No		48	104 Winslow Dr		
	OF-578	No		49	989 Washington St		
	OF-580	No		49	78 Bradford St		5/1/2019 13:44
	OF-671	No		49	78 Bradford St		
Steep Hill Brook	OF-200	Apr-17	1290	71	73 Ethly Way	**Bacteria (E.coli)	
Dorchester Brook	OF-463	Apr-15	590	34	11 Crockett St	*Nitrogen	
	OF-464	No		34	45 Crockett St		5/9/2019 11:09
Unnamed Tributary (MA73-32)	OF-12	No		71	45 Wheeler Circle	**Bacteria (E.coli); Total Phosphorus	
	OF-64	No		64	1771 Central St		
	OF-65	No		64	1771 Central St		
	OF-136	No		71	75 Mill St		
	OF-545	May-19	2500	71	45 Wheeler Circle		
	OF-612	No		64	1771 Central St		
	OF-697	No		71	45 Wheeler Circle		
	OF-742	No		64	1771 Central St		
	OF-757	No		64	1771 Central St		

* = Taunton River Watershed Impairment

** = Boston Harbor: Neponset Watershed Impairment

All outfalls will be sampled for:
Ammonia, Chlorine, E. coli, Surfactants

pH, DO, specific conductivity, salinity, temperature

Additional Outfalls to Screen

Waterbody	OF ID	Previously Sampled?	E.coli Results	Map Grid #	Approx. Street Address	Additional Sampling Parameters
Wetlands near Beaver Meadow Brook	OF-40	No		83	125 Charles Ave	**Bacteria (E.coli)
Dorchester Brook	OF-55	No		27	110 Atkinson Ave	*Nitrogen
	OF-56	Apr-17	<1	27	54 Daly Drive Ext	*Nitrogen
	OF-113	No		27	Daly Drive	*Nitrogen
Unnamed Pond (1)	OF-57	No		26	1518 Washington St	*Nitrogen
Unnamed Wetlands	OF-743	Apr-17	<1	37	63 Central St (Avon)	*Nitrogen
	OF-744	Apr-17	4	37	63 Central St (Avon)	*Nitrogen
Unnamed Pond (2)	OF-765	No		86	Reebok Dr/Page St	***Pathogens (E.coli)
Steep Hill Brook	OF-748	No		71	2070 Central St	**Bacteria (E.coli)
Unnamed Tributary to Dorchester Brook	OF-755	No		35	632 Sumner St	*Nitrogen
	OF-756	No		35	632 Sumner St	*Nitrogen
	OF-745	No		35	1 Cedar St	*Nitrogen

Dorchester Brook

* = Taunton River Watershed Impairment

** = Boston Harbor: Neponset Watershed Impairment

***=Boston Harbor: Weymouth & Weir Watershed Impairment

Sampled (Flowing) 2019

Screened (Not Flowing) 2019

Table 2: Stormwater Field Screening and Analytical Results
Stoughton, MA
May 1, 9 and 15, 2019

									Surface Water									
Outfall Identification		OF-77	OF-202	OF-203	OF-207	OF-211	OF-378	OF-194	Upstream	Downstream	OF-455	OF-148	OF-322	OF-323	OF-324	OF-580	OF-464	OF-113	OF-756
Discharge Waterbody		Ames Long Pond						Beaver Meadow Brook	East Branch of the Neponset River		Unnamed Tributary to Beaver Meadow Brook	Unnamed Tributary to MA73-32					Dorchester Brook		Unnamed Tributary to Dorchester Brook
Date Sampled		5/9/2019	5/15/2019	5/15/20109	5/9/2019	5/9/2019	5/9/2019	5/1/2019	5/9/2019	5/9/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/9/2019	5/15/2019	5/15/2019
Flow		Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample Time		1:25 PM	1:55 PM	1:31 PM	10:40 AM	11:20 AM	12:50 PM	2:15 PM	2:15 PM	2:05 PM	2:30 PM	1:05 PM	11:15 AM	10:45 AM	11:40 AM	1:40 PM	11:09 AM	12:26 PM	12:45 PM
Field Test Results	**Threshold**																		
Temperature (˚C)	-	4.5	2.8	3.7	4.3	4.7	7.8	11.21	9.5	8.5	10.74	12.18	12.37	12.8	12.71	13.57	2.4	8.8	2.8
Specific Conductance (µS/cm)	2000 (µS/cm)	220.6	247.3	272.1	510.4	406.5	37.5	318	384.2	479	463	215	497	221	387	486	506.3	332.1	238.6
Salinity (ppt)	-	0.11	2.1	0.16	0.25	0.2	0.02	0.54	0.19	0.23	0.62	0.41	0.68	0.56	0.21	0.51	0.24	2.7	0.11
pH	6.5-8.0	**5.87**	**8.89**	7.21	6.60	7.20	6.55	6.59	7.01	6.54	**6.24**	**6.10**	**6.41**	6.60	6.56	**6.40**	**9.07**	6.84	**9.75**
DO (mg/L)	-	13.77	14.66	18.95	20.03	17.6	13.92	10.2	13.7	18.24	9.3	9.32	11.96	17.75	12.2	10.35	12.18	12.04	20.41
Analytical Results																			
Ammonia as Nitrogen (mg/L)	0.5 mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	ND	0.11	ND	ND
Biochemical Oxygen Demand (BOD) (mg/L)	-	-	-	-	-	-	-	ND	ND	ND	-	-	-	-	-	-	-	-	-
Chlorine (TRC) (mg/L)	0.011/0.02 mg/L	1.87	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E. coli (MPN/100 mL)	236 MPN/100 mL	2	1	2	<1.0	<1.0	1	47.3	27.5	14.6	2	<1.0	1	<1.0	<1.0	28.8	36.4	10.9	4.1
Phosphorus, Total (mg/L)	-	-	-	-	-	-	-	ND	0.12	0.12	ND	ND	ND	0.12	ND	ND	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	0.04	0.011	0.027	ND	ND	ND	0.023	0.1	0.05	0.036	0.026	0.023	0.011	0.019	0.025	ND	0.023	0.012
Nitrogen, Total (mg/L)	-	0.9	1.08	1.45	0.84	0.8	0.58	-	-	-	-	-	-	-	-	-	1.24	2.57	0.76
Nitrate as N	-	0.101	0.603	0.276	0.292	0.342	ND	-	-	-	-	-	-	-	-	-	0.614	2.11	0.283
Nitrite as N	-	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	ND	ND	ND
Turbidity	-	ND	ND	35.7	1.1	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-

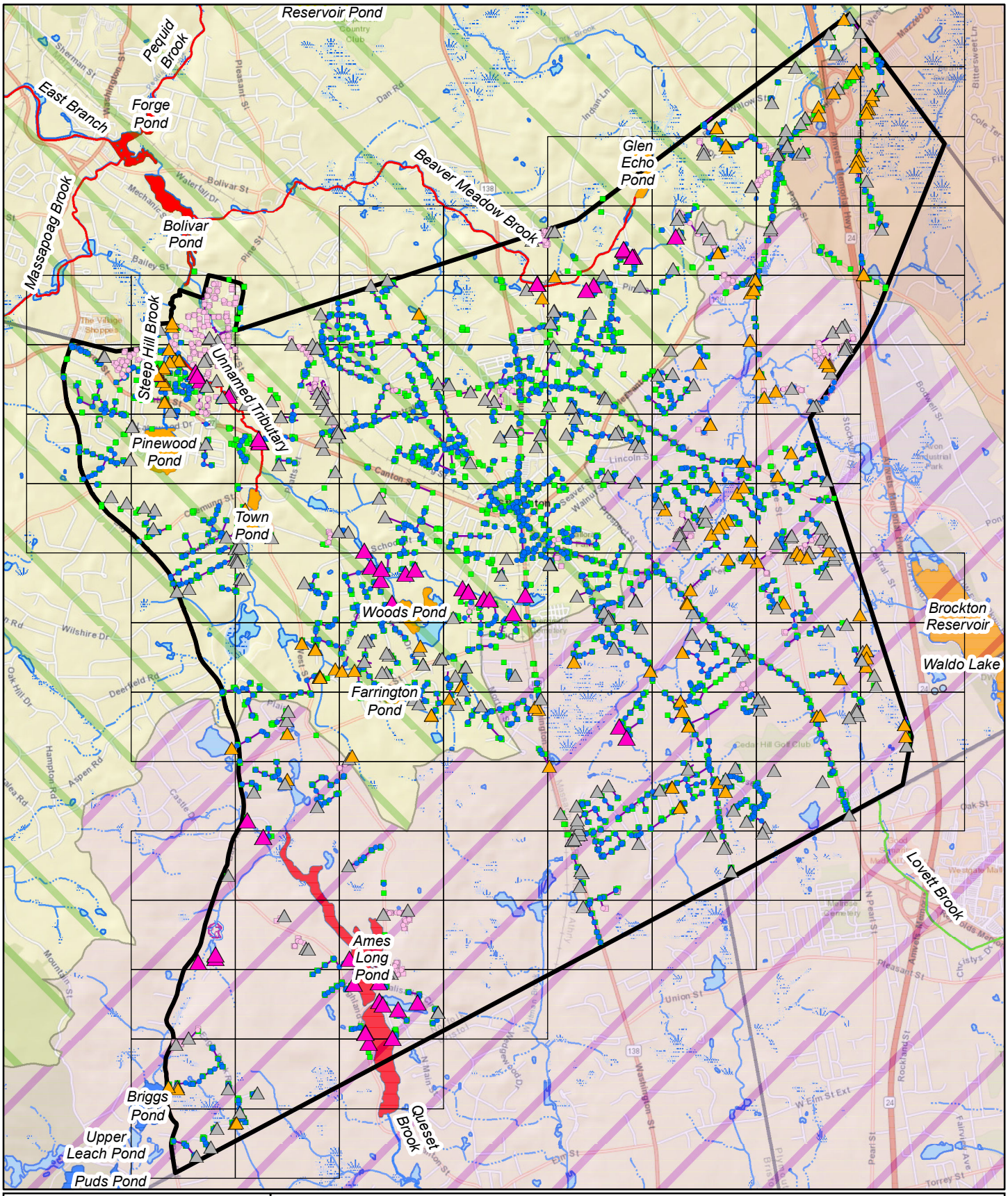
Notes:
- : Not Tested
ND: Non-detect
Bold Values exceed contaminant criteria.

Table 3: Outfall Observation Log
Stoughton, MA
May 1, 9 and 15, 2019

OF_ID	AdditNotes	Waterbody	InspNotes	2019Sample	date	time	address_fu
OF-697				Yes	5/1/2019		45 Wheeler Circle Stoughton Norfolk MA 02072 US
OF-395				Yes	5/1/2019		25 Darling Way Stoughton Norfolk MA 02072 US
OF-486				Yes	5/1/2019		47 Darling Way Stoughton Norfolk MA 02072 US
OF-136				Yes	5/1/2019		75 Mill Street Stoughton Norfolk MA 02072 US
OF-742		Unnamed Tributary		Yes	5/1/2019		1771 Central Street Stoughton Norfolk MA 02072 US
OF-757		Unnamed Tributary		Yes	5/1/2019		1771 Central Street Stoughton Norfolk MA 02072 US
OF-12		Unnamed Tributary		Yes	5/1/2019		45 Wheeler Circle Stoughton Norfolk MA 02072 US
OF-193	Slightly moved	Beaver Meadow Brook		Yes	5/1/2019		14 Meadowbrook Lane Stoughton Norfolk MA 02072 US
OF-195		Beaver Meadow Brook		Yes	5/1/2019		14 Meadowbrook Lane Stoughton Norfolk MA 02072 US
OF-200		Steep Hill Brook	FLOWING-ORANGE RESIDUE and bubbles	Yes	5/1/2019		73 Ethyl Way Stoughton Norfolk MA 02072 US
OF-38		Beaver Meadow Brook		Yes	5/1/2019		90 Trowbridge Circle Stoughton Norfolk MA 02072 US
OF-39		Beaver Meadow Brook		Yes	5/1/2019		102 Deady Ave Stoughton Norfolk MA 02072 US
OF-64		Unnamed Tributary	Comes from previously unmpaped catch basin in water works parking lot	Yes	5/1/2019		1771 Central Street Stoughton Norfolk MA 02072 US
OF-65		Unnamed Tributary	Comes from manhole	Yes	5/1/2019		1771 Central Street Stoughton Norfolk MA 02072 US
OF-156		Unnamed Tributary		Yes	5/1/2019		497 School Street Stoughton Norfolk MA 02072 US
OF-150		Unnamed Tributary	Outlet culvert, very overgrown	Yes	5/1/2019		72 Bradford Street Stoughton Norfolk MA 02072 US
OF-151	Inlet moved 218 feet	Unnamed Tributary	outfall, into culvert inlet	Yes	5/1/2019		202 Morton Street Stoughton Norfolk MA 02072 US
OF-545		Unnamed Tributary	Outfall - Goes to stream. Orange residue	Yes	5/1/2019		45 Wheeler Circle Stoughton Norfolk MA 02072 US
OF-612		Unnamed Tributary	Outfall - Goes to stream	Yes	5/1/2019		1771 Central Street Stoughton Norfolk MA 02072 US
OF-286		Beaver Meadow Brook	Outfall - Goes to wetlands	Yes	5/1/2019		213 Glen Echo Blvd Stoughton Norfolk MA 02072 US
OF-306		Beaver Meadow Brook	Outfall - Goes to stream	Yes	5/1/2019		90 Trowbridge Circle Stoughton Norfolk MA 02072 US
OF-334		Beaver Meadow Brook	Outfall - Goes to stream	Yes	5/1/2019		102 Deady Ave Stoughton Norfolk MA 02072 US
OF-350		Unnamed Tributary	Outfall - Goes to stream. May want to sample from MH	Yes	5/1/2019		14 Dino Dr Stoughton Norfolk MA 02072 US
OF-450		Unnamed Tributary	Outfall - Goes to pond	Yes	5/1/2019		75 Sheehan St Stoughton Norfolk MA 02072 US
OF-456		Beaver Meadow Brook	Outfall - Goes to stream	Yes	5/1/2019		90 Trowbridge Circle Stoughton Norfolk MA 02072 US
OF-465		Unnamed Tributary	Outfall - Goes to swamp. Entirely submerged	Yes	5/1/2019		132 Winslow Drive Stoughton Norfolk MA 02072 US
OF-469		Unnamed Tributary	Outfall - Goes to swamp	Yes	5/1/2019		104 Winslow Drive Stoughton Norfolk MA 02072 US
OF-671		Unnamed Tributary	Outfall - Goes to stream. Almost entirely submerged	Yes	5/1/2019		78 Bradford Street Stoughton Norfolk MA 02072 US
OF-578	State ownership			Yes	5/9/2019	9:03	989 Washington St Stoughton Norfolk MA 02072 US
OF-250				Yes	5/9/2019	9:40	68 Jordan Dr Stoughton Norfolk MA 02072 US
OF-77	Just barely flowing	Ames Long Pond	to woods and then to lake	Yes	5/9/2019	9:25	1561–1699 West St Stoughton Norfolk MA 02072 US
OF-159		Ames Long Pond		Yes	5/9/2019	10:03	15 Walters Way Stoughton Norfolk MA 02072 US
OF-162		Ames Long Pond		Yes	5/9/2019	13:11	1000 Highland St Stoughton Norfolk MA 02072 US
OF-553		Ames Long Pond	Outfall - Goes to pond	Yes	5/9/2019	13:41	1–63 Lake Dr Stoughton Norfolk MA 02072 US
OF-554		Ames Long Pond	Outfall - Goes to pond	Yes	5/9/2019	13:43	1000 Highland St Stoughton Norfolk MA 02072 US
OF-351	May have been flowing recently but no flow at time of observation	Ames Long Pond	Outfall - Goes to wetlands	Yes	5/9/2019	9:58	115 Walters Way Stoughton Norfolk MA 02072 US
OF-376		Ames Long Pond	Outfall - Goes to pond	Yes	5/9/2019	12:52	736–1198 Highland St Stoughton Norfolk MA 02072 US
OF-378		Ames Long Pond	Outfall - Goes to pond	Yes	5/9/2019	12:52	736–1198 Highland St Stoughton Norfolk MA 02072 US
OF-207	Steady flow	Ames Long Pond	Outfall - Goes to pond	Yes	5/9/2019	10:27	450 Highland St Stoughton Norfolk MA 02072 US
OF-211		Ames Long Pond	Outfall - Goes to pond	Yes	5/9/2019	11:07	536 Highland St Stoughton Norfolk MA 02072 US
OF-249	Half submerged	Ames Long Pond	Outfall. Vegetation in front	Yes	5/9/2019	9:35	25 Jordan Dr Stoughton Norfolk MA 02072 US
OF-251	To access, go down path along edge of bmp/pond	Ames Long Pond	Outfall from detention basin. Two pipes stacked. Outlet from OF 252	Yes	5/9/2019	9:44	68 Jordan Dr Stoughton Norfolk MA 02072 US
OF-463	Sheen	Coweeset Brook	Outfall - Goes to river - Pipe end broken from rest of pipe. Now it is pointing down at 135 degree angle	Yes	5/9/2019	7:54	11 Crockett St Stoughton Norfolk MA 02072 US
OF-464	Very difficult access, go in from white gate at house 45, lots of thorns, not able to actually see pipe end	Coweeset Brook	Outfall - Goes to stream	Yes	5/9/2019	8:00	45 Crockett St Stoughton Norfolk MA 02072 US
OF-743	Outfall to Stream. Flowing, possibly diverted stream. AVON DRAINAGE	Lovett Brook		Yes	5/15/2019	10:39	58–98 Central St Avon Norfolk MA 02322 US
OF-744	Outfall to stream, AVON drainage	Lovett Brook		Yes	5/15/2019	10:38	58–98 Central St Avon Norfolk MA 02322 US
OF-745	Outfall for stream from S-1120 28" or 30", smells. No flow in manhole but flow from culvert across street	Coweeset Brook		Yes	5/15/2019	9:20	1 Cedar St Stoughton Norfolk MA 02072 US
OF-748	Outfall to Stream	Steep Hill Brook		Yes	5/15/2019	11:30	2070 Central St Stoughton Norfolk MA 02072 US
OF-755	CULVERT OUTLET	Coweeset Brook		Yes	5/15/2019	9:27	8 Anderson Rd Stoughton Norfolk MA 02072 US
OF-756	Heavy flow from CB on Sumner	Coweeset Brook		Yes	5/15/2019	9:29	8 Anderson Rd Stoughton Norfolk MA 02072 US
OF-765	Outfall 70% submerged	Cochato River		Yes	5/15/2019	10:57	39–113 Page St Stoughton Norfolk MA 02072 US
OF-40	Pipe end completely submerged, can hear flowing water but unsure where it's coming from	Beaver Meadow Brook		Yes	5/15/2019	9:56	168 Washington St Stoughton Norfolk MA 02072 US
OF-55	On headwall with culvert, submerged, checked manhole	Coweeset Brook		Yes	5/15/2019	9:10	61 Farnham Rd Stoughton Norfolk MA 02072 US
OF-56	Submerged, does not seem to be flowing	Coweeset Brook		Yes	5/15/2019	9:03	12 Daly Drive Ext Stoughton Norfolk MA 02072 US
OF-57	CULVERT on on state rd	Longwater Pond	Picks up drainage from Morton St	Yes	5/15/2019	8:51	1518 Washington St Stoughton Norfolk MA 02072 US
OF-547		Ames Long Pond	Outfall - Goes to pond	Yes	5/15/2019	8:17	145 Lake Dr Stoughton Norfolk MA 02072 US
OF-202	Heavy flow, Bird Street conservation land drainage? Possibly stream outlet from there. Lower flow in PM	Ames Long Pond	Outfall - Goes to pond	Yes	5/15/2019	7:52	234 Palisades Cir Stoughton Norfolk MA 02072 US
OF-203	Very little flow	Ames Long Pond	Outfall - Goes to pond	Yes	5/15/2019	7:45	1725 West St Stoughton Norfolk MA 02072 US
OF-204		Ames Long Pond	Outfall - Goes to pond	Yes	5/15/2019	8:10	36 Palisades Cir Stoughton Norfolk MA 02072 US
OF-194		Beaver Meadow Brook		Yes	5/30/2019	16:11	14 Meadowbrook Ln Stoughton MA
OF-148	No OF data provided on plan.	Unnamed Tributary	if need to sample, ask DPW to clear out	Yes	5/30/2019	16:16	153 Rogers Dr Stoughton MA
OF-580		Unnamed Tributary	Outfall - Goes to stream	Yes	5/30/2019	16:24	78 Bradford St Stoughton MA
OF-322		Unnamed Tributary	Outfall - Goes to swampy stream that may attach to nearby pond	Yes	5/30/2019	16:18	176 Kotlik St Stoughton MA
OF-323		Unnamed Tributary	Outfall - need to access private property to inspect (residents were not home)	Yes	5/30/2019	16:21	98 Kotlik St Stoughton MA
OF-324		Unnamed Tributary	Outfall - Goes to pond. Nearly entirely submerged. Headwall falling apart	Yes	5/30/2019	16:22	70 Kotlik St Stoughton MA
OF-455		Beaver Meadow Brook	Outfall - Goes to stream	Yes	5/30/2019	16:15	102 Deady Ave Stoughton MA

Table 3: Outfall Observation Log
Stoughton, MA
May 1, 9 and 15, 2019

OF_ID	flow_pre_1	outfall__1	condition	diameter	material	headwall_1	headwall_2	headwall_3	temperatur	ph	dissolved_	specific_c	salinity_p	verify_con	verify_rec
OF-697	No	End of Pipe	Good	8	Concrete	Pipe	Good	Good						yes	yes
OF-395	No	End of Pipe	Good	15	Concrete	Headwall	Good	Concrete						yes	yes
OF-486	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-136	No	End of Pipe	Good	12	Concrete	Headwall	none	None						yes	yes
OF-742	No	End of Pipe	Good	0	Concrete	Pipe	Good	Concrete						yes	yes
OF-757	No	End of Pipe	Good	12	Concrete	Pipe	Good	Concrete						yes	yes
OF-12	No	End of Pipe	Good	24	Concrete	stone	fair	Masonry Stone						yes	yes
OF-193	No	End of Pipe	Good	12	Concrete	Headwall	Good	Masonry Block						yes	yes
OF-195	No	End of Pipe	Good	12	Concrete	concrete block	good	Masonry Block						yes	yes
OF-200	Yes	End of Pipe	Good	18	Concrete	stone	poor	Masonry Stone						yes	yes
OF-38	No	End of Pipe	Good	12	Concrete	concrete	fair	Concrete						yes	yes
OF-39	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-64	No	End of Pipe	Good	12	Concrete	none	none	None						yes	yes
OF-65	No	End of Pipe	Good	14	Concrete	none	none	None						yes	yes
OF-156	No	End of Pipe	Good	24x36	Concrete	Headwall	Good	Concrete						yes	yes
OF-150	Yes	End of Pipe	Good	unknown	Concrete	Headwall	Good	Concrete						yes	yes
OF-151	No	End of Pipe	Good	8	Concrete	Headwall	Good	None						yes	yes
OF-545	No	End of Pipe	Good	24	Concrete	Headwall	Good	Concrete						yes	yes
OF-612	No	End of Pipe	Good	8	Concrete	Headwall	Good	Stone						yes	yes
OF-286	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-306	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-334	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-350	No	End of Pipe	Good	24	Concrete	Headwall	Good	Stone						yes	yes
OF-450	No	End of Pipe	Good	12	Concrete	Pipe	Good	Concrete						yes	yes
OF-456	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-465	No	End of Pipe	Good		Concrete	Headwall	Good	Concrete						yes	yes
OF-469	No	End of Pipe	Good	12	Concrete	Headwall	Good	Concrete						yes	yes
OF-671	No	End of Pipe	Good	12?	Concrete	Headwall	Good	Concrete						yes	yes
OF-578	no	End of Pipe	Good	12”	Concrete	N/A								yes	yes
OF-250	no	End of Pipe	Clogged with debris	12	RCP	Headwall	Concrete	Good						yes	yes
OF-77	Yes	West Street (02)	Good	18	Concrete	Headwall	good	Concrete	4.5	5.87	13.77	220.6	0.11	yes	yes
OF-159	no	End of Pipe	Good	12	Concrete	Headwall	Concrete	good						yes	yes
OF-162	no	End of Pipe	Good	18	Concrete	Headwall	Concrete	Good						yes	yes
OF-553	no	End of Pipe	Good	12	RCP	FES								yes	yes
OF-554	no	End of Pipe	Good	12	RCP	FES								yes	yes
OF-351	no	End of Pipe	Good	18	RCP	Headwall	Concrete	Good						yes	yes
OF-376	no	End of Pipe	Good	24	RCP	Headwall	Concrete	Good						yes	yes
OF-378	yes	End of Pipe	Good	18	RCP	Headwall	Concrete	Good	7.8	6.55	13.92	37.5	0.02	yes	yes
OF-207	yes	End of Pipe	Good	15	RCP	Headwall	Other	Good	4.3	6.6	20.03	510.4	0.25	no	no
OF-211	yes	End of Pipe	Good	24	RCP	Headwall	Concrete	Good	4.7	7.2	17.6	406.5	0.2	yes	yes
OF-249	no	End of Pipe	Clogged with debris	12	RCP	Headwall	Concrete	Fair						yes	yes
OF-251	no	End of Pipe	Good	6	PVC	Headwall	Concrete	Good						yes	yes
OF-463	no	End of Pipe	Other	24	RCP	N/A								yes	yes
OF-464	yes	End of Pipe	Unknown	15	RCP	N/A			2.4	9.07	12.18	506.3	0.24	yes	yes
OF-743	yes	End of Pipe	Spalling (concrete)	15	RCP	Headwall	Concrete	Good						yes	yes
OF-744	yes	End of Pipe	Good	12	RCP	Headwall	Concrete	Good						yes	yes
OF-745	no	End of Pipe	Good	24”	RCP	Headwall	Concrete	Good						yes	yes
OF-748	no	End of Pipe	Good	12	RCP	Headwall	Concrete	Good						yes	yes
OF-755	yes	End of Pipe	Good	36	RCP	Headwall	Stone	Good						yes	yes
OF-756	yes	End of Pipe	Good	12	RCP	Headwall	Stone	Good	2.8	9.75	20.41	238.6	0.11	yes	yes
OF-765	no	End of Pipe	Fair	24?	Concrete	N/A								yes	yes
OF-40	no	End of Pipe	Good	12	Concrete	Headwall	Concrete	Fair						yes	yes
OF-55	no	End of Pipe	Good	18	Concrete	Headwall	Concrete	Good						yes	yes
OF-56	no	End of Pipe	Good	14	Concrete	N/A								yes	yes
OF-57	yes	Surface Drainage	Damaged	unknown, 36?	Concrete									no	no
OF-547	no	End of Pipe	Good	15	RCP	N/A								yes	yes
OF-202	yes	End of Pipe	Good	15	RCP	Headwall	Concrete	Good	2.8	8.89	14.66	247.3	2.1	yes	yes
OF-203	yes	End of Pipe	Good	12	RCP	Headwall	Concrete	Good	3.7	7.21	18.95	272.1	0.16	yes	yes
OF-204	no	End of Pipe	Good	15	RCP	Headwall	Concrete	Good						yes	yes
OF-194	yes	End of Pipe	Good	24	Concrete	Headwall	Masonry Block	good	11.21	6.59	10.2	318	0.54	yes	yes
OF-148	yes	End of Pipe	Good	24	Concrete	Headwall	Masonry Block	Good	12.18	6.1	9.32	215	0.41	yes	yes
OF-580	yes	End of Pipe	Good	24	RCP	Headwall	Concrete	Good	13.57	6.4	10.35	456	0.51	yes	yes
OF-322	yes	End of Pipe	Good	20	RCP	Headwall	Concrete	Good	12.37	6.41	11.96	497	0.68	yes	yes
OF-323	yes	End of Pipe	Good	12	RCP	Headwall	Concrete	Good	12.8	6.6	17.75	221	0.56	yes	yes
OF-324	yes	End of Pipe	Other	12	RCP	Headwall	Concrete	Poor	12.71	6.56	12.2	387	0.21	yes	yes
OF-455	yes	End of Pipe	Good	12	RCP	Headwall	Concrete	Good	10.74	6.24	9.3	463	0.62	yes	yes



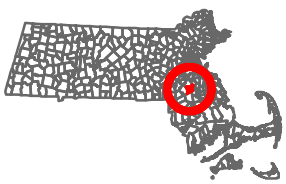


Figure 1: Sampling Locations
Stoughton, Massachusetts
May 2019

Environmental Partners

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ENVIRONMENTAL PARTNERS

TECHNICAL MEMORANDUM

Date: June 30, 2021

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

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

CC Annie Tucker – Environmental Scientist, Environmental Partners

Subject Illicit Discharge Detection & Elimination (IDDE) Investigations
MS4 General permit Assistance for the DPW Engineering Division

This memorandum summarizes the FY21 Dry Weather Investigations, outlined in Task 2 of 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 task, Environmental Partners Group, Inc. (EP) conducted outfall screening and sampling over the course of four (4) days in May and June 2021. A total of 69 outfalls were screened, of which fourteen were found to be flowing during dry weather. This work completed the MS4 General Permit requirement to screen during dry weather all MS4 outfalls by the third year of the permit term (June 30, 2021).

Outfall Sampling

On May 11th and 18th, June 24th, and July 15th, 2021, EP staff attempted to visit 69 outfall locations during dry weather. Only field sampling of total chlorine was conducted in July, 2021. The 69 locations visited represent the remaining outfalls in the Town's MS4 outfall inventory not inspected during dry weather and outfalls EP previously found were flowing during dry weather and sampled. The locations of all 69 screened outfalls are shown on Figure 1: Dry Weather Outfall Sampling Locations.

During outfall screening, EP determined that 11 outfalls were not part of the Town's MS4 system, and the Town confirmed that those outfalls are either private, DOT-owned, do not exist, or another category of stormwater structure. The current MS4 Outfall inventory for Stoughton is **123 outfalls.**

Results and Recommendations

A total of 14 outfalls were sampled for field measurements and laboratory analysis: Outfalls OF-378, OF-77, OF-440, OF-207, OF-211, OF-453, OF-324, OF-322, OF-580, OF-788, OF-792, OF-743, OF-567, and OF-587. All samples were analyzed for ammonia, chloride, fecal coliform, E. coli, total phosphorous, and surfactants at a state certified laboratory, Alpha Analytical Inc. in Westborough, MA. Select outfalls required additional analysis due to water quality impairments. Outfalls OF-77, OF-440, OF-207, and OF-211 required analysis for Total Suspended Solids (TSS) and Turbidity, and outfall OF-587 required analysis for Biological Oxygen Demand (BOD).

Field parameters sampled for include: temperature, specific conductance, salinity, pH, total chlorine, and dissolved oxygen. A summary of the field and analytical results is presented in Table 1: Stormwater Field Screening and Analytical Results. All the outfalls screened are listed on Table 2: Outfall Sampling Locations.

Four (5) outfalls sampled resulted in parameters outside the regulated thresholds.

- At Outfall OF-207, pH was detected at 6.3, slightly below the threshold limit of 6.5. In addition, E. Coli was detected at 410.58 MPN/100 mL, which is above the threshold limit of 236 MPN/100 mL.
- At Outfall 440, E. Coli was detected at 1,203 MPN/100 mL, which is above the threshold limit of 236 MPN/100 mL.
- At Outfall OF-792, specific conductance was detected at 3408 µS/cm, which is above the threshold limit of 2000 µS/cm.
- At Outfall OF-567, pH was detected at 5.92, below the threshold limit of 6.5.
- At Outfall OF-587, pH was detected at 5.22, below the threshold limit of 6.5.

In addition to the five (5) outfalls with sampling results outside of regulated thresholds, 12 of the 14 outfalls sampled for total chlorine resulted in detectable levels of total chlorine. Three (3) outfalls had total chlorine concentrations greater than 0.10 mg/L. The highest concentration of total chlorine observed was 0.29 mg/L at Outfall OF-788 near 150 Larson Road. The MS4 General Permit considers any detectable level of chlorine to be a potential signal of an illicit discharge. EP tested total chlorine with a field test kit due to the small hold time of chlorine.

Moving forward, EP recommends the following:

- Perform additional investigation of the four (4) outfalls sampled that had elevated parameter levels (OF-207, OF-792, OF-567, and OF-587) to determine the likely source of the contaminants levels.
- Investigate potential reasons for the detectable chloride levels within most of the outfalls sampled.
- Begin IDDE catchment investigations, starting with the high priority outfalls/catchments.
- Continue performing wet weather outfall sampling at outfalls within catchments that have at least one (1) System Vulnerability Factor (SVF) identified.

Attachments

Table 1: Stormwater Field Screening and Analytical Results

Figure 1: Dry Weather Outfall Sampling Locations

Table 2: Outfall Sampling Locations

Laboratory Analytical Report

Stoughton MS4 Certification Page

TABLE 1: STORMWATER FIELD SCREENING AND ANALYTICAL RESULTS

Table 1: Stormwater Field Screening and Analytical

Results Stoughton, MA

June 2021

Outfall Identification		OF-378			OF-77	
Discharge Waterbody		Ames Long Pond			Ames Long Pond	
Date Sampled		5/18/2021	6/24/2021	7/15/2021	5/18/2021	7/15/2021
Sample Time		1:00 PM	1:35 PM	5:41 PM	12:35 PM	11:14 AM
Field Test Results	**Threshold**		-			
Temperature (˚C)	-	14.7	-	-	11.9	-
Specific Conductance (µS/cm)	2000 (µS/cm)	34.3	-	-	304.8	-
Salinity (ppt)	-	0.01	-	-	0.15	-
DO (mg/L)	-	6.61	-	-	5.79	-
pH	6.5-8.0	7.48	-	-	7.12	-
Total Chlorine	-	-	-	0.08	-	0.22
Analytical Results						
Turbidity	-	-	-	-	2.1	-
Solids, Total Suspended	-	-	-	-	15	-
Chloride	-	5.8	-	-	68	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	0.087	-	-	ND	-
BOD, 5 Day	-	-	-	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	-	-	ND	-
Coliform, Fecal (MF) col/100ml	-	ND	38	-	2*	-
E. coli (MPN/100 mL)	236 MPN/100 mL	1	40.2	-	<1*	-

Outfall Identification		1. OF-440			OF-207	
Discharge Waterbody		Unnamed Tributary to Town Pond			Ames Long Pond	
Date Sampled		5/18/2021	6/24/2021	7/15/2021	5/21/2021	7/15/2021
Sample Time		12:10 PM	1:20 PM	11:48 AM	12:00 PM	10:34 AM
Field Test Results	**Threshold**					
Temperature (˚C)	-	15.5	-	-	12	-
Specific Conductance (µS/cm)	2000 (µS/cm)	329.2	-	-	743	-
Salinity (ppt)	-	0.16	-	-	0.37	-
DO (mg/L)	-	4.93	-	-	9.43	-
pH	6.5-8.0	7.22	-	-	**6.3**	-
Total Chlorine	-	-	-	0.04	-	0
Analytical Results						
Turbidity	-	2.2	-	-	0.92	-
Solids, Total Suspended	-	ND	-	-	28	-
Chloride	-	81	-	-	220	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	ND	-	-	ND	-
BOD, 5 Day	-	-	-	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	-	-	ND	-
Coliform, Fecal (MF) col/100ml	-	82	760	-	33	-
E. coli (MPN/100 mL)	236 MPN/100 mL	63.14	**1203.33**	-	**410.58**	-

Notes:

- : Not Tested

ND: Non-detect

Bold Values exceed contaminant criteria.

* Indicates samples that were analyzed with the method required holding time exceeded.

Table 1: Stormwater Field Screening and Analytical

Results Stoughton, MA

June 2021

Outfall Identification		OF-211		OF-453	
Discharge Waterbody		Ames Long Pond		Unnamed Tributary to Town Pond	
Date Sampled		5/21/2021	7/15/2021	5/21/2021	7/15/2021
Sample Time		11:40 AM	10:45 AM	11:00 AM	4:43 PM
Field Test Results	**Threshold**				
Temperature (˚C)	-	12.7	-	17.7	-
Specific Conductance (µS/cm)	2000 (µS/cm)	325.6	-	153.3	-
Salinity (ppt)	-	0.16	-	0.07	-
DO (mg/L)	-	7.45	-	5.46	-
pH	6.5-8.0	6.6	-	6.9	-
Total Chlorine	-	-	0.04	-	0.04
Analytical Results					
Turbidity	-	0.42	-	-	-
Solids, Total Suspended	-	ND	-	-	-
Chloride	-	84	-	34	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	ND	-	0.105	-
BOD, 5 Day	-	-	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	-	ND	-
Coliform, Fecal (MF) col/100ml	-	ND	-	ND	-
E. coli (MPN/100 mL)	236 MPN/100 mL	<1	-	5.16	-

Outfall Identification		OF-324		OF-322	
Discharge Waterbody		Unnamed Tributary to Steep Hill Brook		Woods Pond	
Date Sampled		5/21/2021	7/15/2021	5/21/2021	7/15/2021
Sample Time		10:40 AM	4:28 PM	10:20 AM	4:44 PM
Field Test Results	**Threshold**				
Temperature (˚C)	-	41.1	-	15	-
Specific Conductance (µS/cm)	2000 (µS/cm)	407.5	-	499.1	-
Salinity (ppt)	-	0.2	-	0.24	-
DO (mg/L)	-	6.80	-	7.15	-
pH	6.5-8.0	7.06	-	6.96	-
Total Chlorine	-	-	0.13	-	0.03
Analytical Results					
Turbidity	-	-	-	-	-
Solids, Total Suspended	-	-	-	-	-
Chloride	-	95	-	120	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	0.192	-	ND	-
BOD, 5 Day	-	-	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	0.07	-	ND	-
Coliform, Fecal (MF) col/100ml	-	2	-	ND	-
E. coli (MPN/100 mL)	236 MPN/100 mL	<1	-	<1	-

Notes:

- : Not Tested

ND: Non-detect

Bold Values exceed contaminant criteria.

* Indicates samples that were analyzed with the method required holding time exceeded.

Table 1: Stormwater Field Screening and Analytical

Results Stoughton, MA

June 2021

Discharge Waterbody		Unnamed Tributary to Steep Hill Brook		Brockton Reservoir	
Date Sampled		5/21/2021	7/15/2021	5/21/2021	7/15/2021
Sample Time		9:30 AM	4:27 PM	8:45 AM	11:11 AM
Field Test Results	**Threshold**				
Temperature (˚C)	-	12.6	-	10.2	-
Specific Conductance (µS/cm)	2000 (µS/cm)	1712	-	523	-
Salinity (ppt)	-	0.87	-	0.25	-
DO (mg/L)	-	6.73	-	7.08	-
pH	6.5-8.0	**6.23**	-	7.27	-
Total Chlorine	-	-	-	-	0.29
Analytical Results					
Turbidity	-	-	-	-	-
Solids, Total Suspended	-	-	-	-	-
Chloride	-	560	-	140	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	0.112	-	ND	-
BOD, 5 Day	-	-	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	-	ND	-
Coliform, Fecal (MF) col/100ml	-	ND	-	ND	-
E. coli (MPN/100 mL)	236 MPN/100 mL	<1	-	<1	-

Outfall Identification		OF-792		OF-743	
Discharge Waterbody		Cochato River		Unnamed Wetlands near Lovett Brook 2	
Date Sampled		5/21/2021	7/15/2021	5/18/2021	7/15/2021
Sample Time		8:10 AM	8:44 AM	2:45 PM	12:01 PM
Field Test Results	**Threshold**				
Temperature (˚C)	-	15.5	-	13.8	-
Specific Conductance (µS/cm)	2000 (µS/cm)	**3408**	-	1500	-
Salinity (ppt)	-	1.8	-	0.76	-
DO (mg/L)	-	4.81	-	6.80	-
pH	6.5-8.0	7.16	-	6.82	-
Total Chlorine	-	-	0.07	-	0.01
Analytical Results					
Turbidity	-	-	-	-	-
Solids, Total Suspended	-	-	-	-	-
Chloride	-	1100	-	480	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	0.109	-	ND	-
BOD, 5 Day	-	-	-	-	-
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	-	ND	-
Coliform, Fecal (MF) col/100ml	-	3	-	ND	-
E. coli (MPN/100 mL)	236 MPN/100 mL	<1	-	<1	-

Notes:

- : Not Tested

ND: Non-detect

Bold Values exceed contaminant criteria.

* Indicates samples that were analyzed with the method required holding time exceeded.

Table 1: Stormwater Field Screening and Analytical

Results Stoughton, MA

June 2021

Outfall Identification		OF-567		OF-587	
Discharge Waterbody		Lovett Brook		Unnamed Tributary to Beaver Brook	
Date Sampled		5/18/2021	7/15/2021	5/18/2021	7/15/2021
Sample Time		2:30 PM	12:14 PM	2:00 PM	1:17 PM
Field Test Results	**Threshold**				
Temperature (˚C)	-	14.7	-	14.9	-
Specific Conductance (µS/cm)	2000 (µS/cm)	771	-	152.4	-
Salinity (ppt)	-	0.38	-	0.07	-
DO (mg/L)	-	5.92	-	5.22	-
pH	6.5-8.0	**6.26**	-	**6.17**	-
Total Chlorine	-	-	0.01	-	0.05
Analytical Results					
Turbidity	-	-	-	-	-
Solids, Total Suspended	-	-	-	-	-
Chloride	-	210	-	36	-
Ammonia as Nitrogen (mg/L)	0.5 mg/L	0.075	-	ND	-
BOD, 5 Day	-	-	-	2.9	-
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	-	ND	-
Coliform, Fecal (MF) col/100ml	-	30	-	8	-
E. coli (MPN/100 mL)	236 MPN/100 mL	14.64	-	29.17	-

Notes:

- : Not Tested

ND: Non-detect

Bold Values exceed contaminant criteria.

* Indicates samples that were analyzed with the method required holding time exceeded.

FIGURE 1: DRY WEATHER SCREENING LOCATIONS

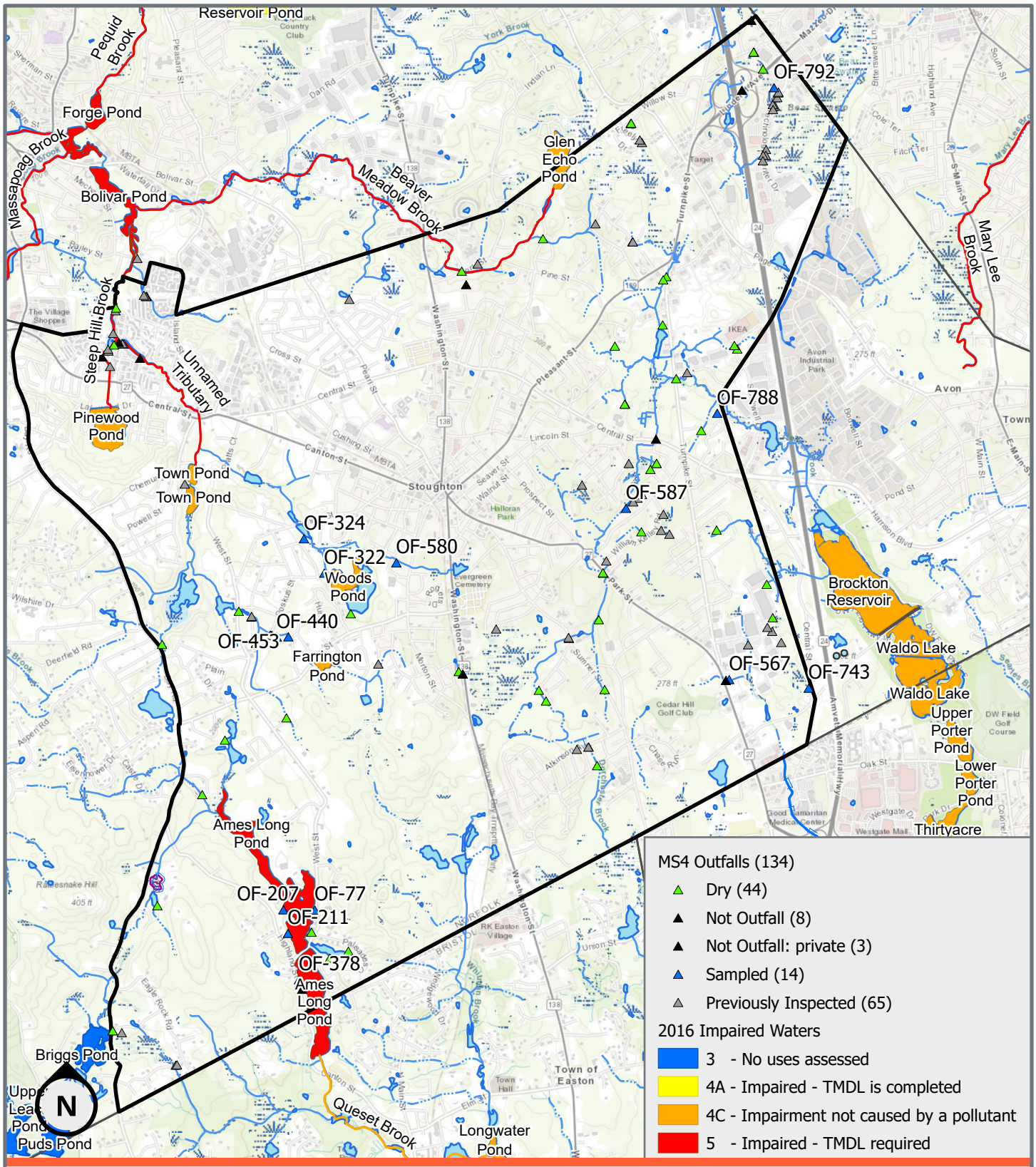

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Figure 1: Dry Weather Sampling Locations

Stoughton, Massachusetts

0 0.5 1 2 Miles

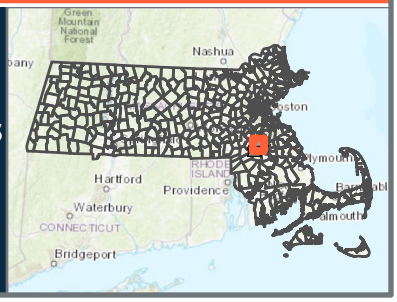

TABLE 2: DRY WEATHER SCREENING LOCATIONS

Table 2: Dry Weather Screening Locations
Stroughton, Massachusetts

Receiving Water Body	Outfall ID	Approximate Street Address	Screening Date	Status
Ames Long Pond	OF-378	216 Palisades Circle	2021-05-11	Sampled
	OF-77	22 Palisades Circle	2021-05-18	Sampled
	OF-207	1 Kay Way	2021-05-18	Sampled
	OF-211	1 Kay Way	2021-05-18	Sampled
	OF-203	445 Central St	2021-05-11	Dry
	OF-202	333 Central St	2021-05-11	Dry
	OF-204	445 Central Street	2021-05-18	Dry
	OF-162	200 Shuman Avenue	2021-05-18	Not Outfall
Beaver Brook	OF-616	672 West Street	2021-05-18	Dry
Beaver Meadow Brook	OF-194	1136 Turnpike St	2021-05-11	Dry
Briggs Pond	OF-468	36 Patricia Drive	2021-05-18	Dry
Brockton Reservoir	OF-788	73 Ethly Way	2021-05-18	Sampled
Cochato River	OF-792	65 Ethyl Way	2021-05-18	Sampled
	OF-791	170 William Kelley Rd	2021-05-18	Dry
	OF-790	6 Carson Drive	2021-05-18	Dry
Dorchester Brook	OF-113	Turnpike Street	2021-05-11	Dry
Lovett Brook	OF-567	Jordan Dr	2021-05-18	Sampled
	OF-647	557 Park Street	2021-05-18	Not Outfall
Plain Street Pond	OF-300	78 Bradford St	2021-05-18	Dry
Steep Hill Brook	OF-200	1670 West St	2021-05-18	Not Outfall: private
	OF-575	450 Highand Dr	2021-05-18	Not Outfall: private
	OF-8	100 Technology Center Drive	2021-05-18	Not Outfall
	OF-303	139 Shuman Avenue	2021-05-18	Dry
	OF-7	63 Central St (Avon)	2021-05-18	Dry
Town Pond	OF-769	25 Poskus Street	2021-05-18	Dry
Unnamed trib to Beaver Meadow Brook	OF-455	951 Pleasant St	2021-05-11	Dry
Unnamed Tributary	OF-702	33 Turnstone Terrace	2021-05-18	Not Outfall
	OF-419	176 Kotlik St	2021-05-18	Not Outfall
Unnamed Tributary to Ames Long Pond	OF-251	11 Crockett St	2021-05-18	Dry
	OF-351	70 Kotlik St	2021-05-18	Dry
Unnamed Tributary To Beaver Brook	OF-522	879 Turnpike Street	2021-05-18	Dry
	OF-327	8 Onset Lane	2021-05-18	Dry
	OF-535	116 Swanson Terrace	2021-05-18	Dry
	OF-492	33 Kwedar Avenue	2021-05-18	Dry
	OF-304	15 Oliver Lane	2021-05-18	Dry
	OF-669	103 York Street	2021-05-18	Dry
	OF-217	1749 West St	2021-06-24	Dry
	OF-587	115 Walters Way	2021-05-18	Sampled
	OF-586	951 Pleasant Street	2021-05-18	Dry
	OF-585	695 Park Street	2021-05-18	Dry
	OF-610	91 East Vanston Road	2021-05-18	Dry
	OF-459	28 Smyth Street	2021-05-18	Dry
	OF-458	1317 Washington St	2021-05-18	Dry
	OF-305	45 Crockett St	2021-05-18	Dry
	OF-383	45 Wheeler Circle	2021-05-18	Not Outfall
Unnamed Tributary to Beaver Brook 2	OF-629	632 Sumner St	2021-05-18	Dry
Unnamed Tributary to Brockton Reservoir	OF-104	14 Meadowbrook Ln	2021-05-18	Dry
	OF-494	172 Curtis Ave	2021-05-18	Dry
Unnamed Tributary to Dorchester Brook	OF-380	1154 Bay Road	2021-05-18	Dry
	OF-565	102 Deady Ave	2021-05-18	Not Outfall
	OF-464	70 Drinkwater Avenue	2021-05-18	Dry
	OF-756	Turnpike Street	2021-05-11	Dry
	OF-463	661 Pleasant St	2021-05-18	Dry
Unnamed Tributary to Steep Hill Brook	OF-545	751 Highland St	2021-05-18	Not Outfall: private
	OF-324	1096 Park Street	2021-05-18	Sampled
	OF-580	76 Grace Lane	2021-05-18	Sampled
Unnamed Tributary to Town Pond	OF-440	769 Highland St	2021-05-18	Sampled
	OF-453	Daly Drive	2021-05-18	Sampled
	OF-664	115 Erin Road	2021-05-18	Dry
	OF-641	53 Barnes Road	2021-05-18	Dry
Unnamed Tributary to Town Pond 2	OF-342	121 E Vanston Rd	2021-05-18	Dry
Unnamed Wetlands near Beaver Meadow Brook	OF-40	150 Larson Road	2021-05-18	Not Outfall
Unnamed Wetlands near Lovett Brook 1	OF-100	557 Park Street	2021-05-18	Dry
Unnamed Wetlands near Lovett Brook 2	OF-743	Technology Center Drive	2021-05-18	Sampled
Unnamed Wetlands to Beaver Brook	OF-245	536 Highand Dr	2021-06-24	Dry
	OF-367	15 Hunt Drive	2021-05-18	Dry
Unnamed Wetlands to Three Swamp Brook	OF-699	1 Kay Way	2021-05-18	Dry
Woods Pond	OF-322	1096 Park St	2021-05-18	Sampled
	OF-242	36 Jessica Dr	2021-05-18	Dry

LABORATORY RESULTS

ANALYTICAL REPORT

Lab Number:	L2126183
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Scott Turner
Phone:	(207) 939-3883
Project Name:	STOUGHTON F14 MS4
Project Number:	R282.2007
Report Date:	06/07/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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).

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126183
Report Date: 06/07/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126183-01	OF-440	WATER	STOUGHTON, MA	05/18/21 12:10	05/18/21
L2126183-02	OF-77	WATER	STOUGHTON, MA	05/18/21 12:35	05/18/21
L2126183-03	OF-378	WATER	STOUGHTON, MA	05/18/21 13:00	05/18/21
L2126183-04	OF-587	WATER	STOUGHTON, MA	05/18/21 14:00	05/18/21
L2126183-05	OF-567	WATER	STOUGHTON, MA	05/18/21 14:30	05/18/21
L2126183-06	OF-743	WATER	STOUGHTON, MA	05/18/21 14:45	05/18/21

Project Name:	STOUGHTON F14 MS4	**Lab Number:**	L2126183
Project Number:	R282.2007	**Report Date:**	06/07/21

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 F14 MS4	**Lab Number:**	L2126183
Project Number:	R282.2007	**Report Date:**	06/07/21

Case Narrative (continued)

Sample Receipt

L2126183-04: The sample identified as "OF-587" on the chain of custody was identified as "OF-487" on the container label. At the client's request, the sample is reported as "OF-587".

Coliform, Fecal (MF)

L2126183-01 and -02 were analyzed with the method required holding time exceeded.

L2126183-03 and -06: The sample has an elevated detection limit due to the dilution required by the method.

E. Coli (MPN)

L2126183-01 thru -03 were analyzed with the method required holding time exceeded.

Nitrogen, Ammonia

L2126183-04: The sample has an elevated detection limit due to the dilution required by the sample matrix.

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: Jennifer L Clements

Title: Technical Director/Representative Date: 06/07/21

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007
Lab Number: L2126183
Report Date: 06/07/21

SAMPLE RESULTS

Lab ID: L2126183-01
Client ID: OF-440
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 05/18/21 12:10
Date Received: 05/18/21
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)	82		col/100ml	2.0	NA	2	-	05/18/21 20:39	121,9222D	SH
E. Coli (MPN)	63.14		MPN/100ml	1	NA	1	-	05/18/21 21:33	121,9223B	SH
General Chemistry - Westborough Lab										
Turbidity	2.2		NTU	0.20	--	1	-	05/20/21 02:51	121,2130B	KA
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/24/21 17:20	121,2540D	DW
Chloride	81.		mg/l	1.0	--	1	-	05/27/21 23:39	121,4500CL-E	AT
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/03/21 18:00	06/06/21 07:37	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/19/21 01:00	05/19/21 06:54	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007
Lab Number: L2126183
Report Date: 06/07/21

SAMPLE RESULTS

Lab ID: L2126183-02
Client ID: OF-77
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 05/18/21 12:35
Date Received: 05/18/21
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)	2.0		col/100ml	2.0	NA	2	-	05/18/21 20:39	121,9222D	SH
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/18/21 21:33	121,9223B	SH
General Chemistry - Westborough Lab										
Turbidity	2.1		NTU	0.20	--	1	-	05/20/21 02:51	121,2130B	KA
Solids, Total Suspended	15.		mg/l	5.0	NA	1	-	05/24/21 17:20	121,2540D	DW
Chloride	68.		mg/l	1.0	--	1	-	05/27/21 23:40	121,4500CL-E	AT
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/03/21 18:00	06/06/21 07:37	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/19/21 01:00	05/19/21 06:55	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126183
Report Date: 06/07/21

SAMPLE RESULTS

Lab ID: L2126183-03
Client ID: OF-378
Sample Location: STOUGHTON, MA

Date Collected: 05/18/21 13:00
Date Received: 05/18/21
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 (MF)	ND		col/100ml	2.0	NA	2	-	05/18/21 20:39	121,9222D	SH
E. Coli (MPN)	1		MPN/100ml	1	NA	1	-	05/18/21 21:33	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	5.8		mg/l	1.0	--	1	-	05/27/21 23:41	121,4500CL-E	AT
Nitrogen, Ammonia	0.087		mg/l	0.075	--	1	06/03/21 18:00	06/06/21 07:38	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/19/21 01:00	05/19/21 06:56	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007
Lab Number: L2126183
Report Date: 06/07/21

SAMPLE RESULTS

Lab ID: L2126183-04
Client ID: OF-587
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
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)	8.0		col/100ml	2.0	NA	2	-	05/18/21 20:39	121,9222D	SH
E. Coli (MPN)	29.17		MPN/100ml	1	NA	1	-	05/18/21 21:33	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	36.		mg/l	1.0	--	1	-	05/27/21 23:41	121,4500CL-E	AT
Nitrogen, Ammonia	ND		mg/l	0.150	--	2	06/03/21 18:00	06/06/21 07:39	121,4500NH3-BH	AT
BOD, 5 day	2.9		mg/l	2.0	NA	1	05/19/21 19:40	05/24/21 16:30	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/19/21 01:00	05/19/21 06:56	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007
Lab Number: L2126183
Report Date: 06/07/21

SAMPLE RESULTS

Lab ID: L2126183-05
Client ID: OF-567
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 05/18/21 14:30
Date Received: 05/18/21
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)	30		col/100ml	2.0	NA	2	-	05/18/21 20:39	121,9222D	SH
E. Coli (MPN)	14.64		MPN/100ml	1	NA	1	-	05/18/21 21:33	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	210		mg/l	10	--	10	-	05/28/21 00:26	121,4500CL-E	AT
Nitrogen, Ammonia	0.075		mg/l	0.075	--	1	06/03/21 18:00	06/06/21 07:40	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/19/21 01:00	05/19/21 06:57	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007
Lab Number: L2126183
Report Date: 06/07/21

SAMPLE RESULTS

Lab ID: L2126183-06
Client ID: OF-743
Sample Location: STOUGHTON, MA
Sample Depth:
Matrix: Water

Date Collected: 05/18/21 14:45
Date Received: 05/18/21
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	-	05/18/21 20:39	121,9222D	SH
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/18/21 21:33	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	480		mg/l	10	--	10	-	05/28/21 00:28	121,4500CL-E	AT
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/03/21 18:00	06/06/21 07:41	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/19/21 01:00	05/19/21 06:57	121,5540C	AW

Project Name:	STOUGHTON F14 MS4	**Lab Number:**	L2126183
Project Number:	R282.2007	**Report Date:**	06/07/21

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: 5/18/21

ALPHA Job #: L2126183

ALPHA ANALYTICAL
Mid-Atlantic Division
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: Environmental Partners
Address: 1900 Crown Colony Dr #402 Quincy MA
Phone: 207 939 3883
Email: aet@envpartners.com sdt@envpartners.com

Additional Project Information:
Mass NPDES MS4

Project Information

Project Name: Stoughton FY21 MS4
Project Location: Stoughton, MA
Project #: R2182.2007
Project Manager: Scott Turner
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

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 _____

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
Fecal coliform, E. coli
Chloride
Surfactants
Ammonia
Turbidity
TSS

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	Sample Comments	TOTAL # BOTTLES
26183-01	OF-440	5/18	12:10	water	AT		9
02	OF-77		12:35				9
03	OF-378		13:00				7
04	OF-587		14:00			BOD also	7
05	OF-567		14:30				7
06	OF-743		14:45				7

Container Type	B	P	P	P	P	P	P
Preservative	H	A	A	D	A	A	A

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 Tuck	5/18/21 3:35	Jenna Davis AAL S	5-18-21 15:35
PA DSAAL S	5/18/21 17:15		5/18/21 1715

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

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

ANALYTICAL REPORT

Lab Number:	L2126983
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Scott Turner
Phone:	(207) 939-3883
Project Name:	STOUGHTON F14 MS4
Project Number:	R282.2007
Report Date:	06/10/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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).

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126983-01	OF-792	WATER	STOUGHTON, MA	05/21/21 08:10	05/21/21
L2126983-02	OF-788	WATER	STOUGHTON, MA	05/21/21 08:45	05/21/21
L2126983-03	OF-580	WATER	STOUGHTON, MA	05/21/21 09:30	05/21/21
L2126983-04	OF-322	WATER	STOUGHTON, MA	05/21/21 10:20	05/21/21
L2126983-05	OF-324	WATER	STOUGHTON, MA	05/21/21 10:40	05/21/21
L2126983-06	OF-453	WATER	STOUGHTON, MA	05/21/21 11:00	05/21/21
L2126983-07	OF-211	WATER	STOUGHTON, MA	05/21/21 11:40	05/21/21
L2126983-08	OF-207	WATER	STOUGHTON, MA	05/21/21 12:00	05/21/21

Project Name:	STOUGHTON F14 MS4	**Lab Number:**	L2126983
Project Number:	R282.2007	**Report Date:**	06/10/21

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 F14 MS4	**Lab Number:**	L2126983
Project Number:	R282.2007	**Report Date:**	06/10/21

Case Narrative (continued)

Sample Receipt

L2126983-06: The sample identified as "OF-453" on the chain of custody was identified as "OF-423" on the container label. At the client's request, the sample is reported as "OF-453".

Coliform, Fecal (MF)

L2126983-02 through -04, -06 and -07: 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: Sebastian Corbin

Title: Technical Director/Representative Date: 06/10/21

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-01
Client ID: OF-792
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 08:10
Date Received: 05/21/21
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 (MF)	3.0		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	1100		mg/l	100	--	100	-	06/09/21 00:51	121,4500CL-E	TL
Nitrogen, Ammonia	0.109		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:18	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 01:30	05/22/21 05:35	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-02
Client ID: OF-788
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 08:45
Date Received: 05/21/21
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 (MF)	ND		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	140		mg/l	10	--	10	-	06/09/21 00:54	121,4500CL-E	TL
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:19	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 01:30	05/22/21 05:36	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-03
Client ID: OF-580
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 09:30
Date Received: 05/21/21
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 (MF)	ND		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	560		mg/l	10	--	10	-	06/08/21 23:17	121,4500CL-E	TL
Nitrogen, Ammonia	0.112		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:20	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:37	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-04
Client ID: OF-322
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 10:20
Date Received: 05/21/21
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 (MF)	ND		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	120		mg/l	10	--	10	-	06/09/21 00:36	121,4500CL-E	TL
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:21	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:37	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-05
Client ID: OF-324
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 10:40
Date Received: 05/21/21
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 (MF)	2.0		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	95.		mg/l	10	--	10	-	06/08/21 23:23	121,4500CL-E	TL
Nitrogen, Ammonia	0.192		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:22	121,4500NH3-BH	AT
Surfactants, MBAS	0.070		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:37	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-06
Client ID: OF-453
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 11:00
Date Received: 05/21/21
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 (MF)	ND		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	5.16		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	34.		mg/l	1.0	--	1	-	06/09/21 00:37	121,4500CL-E	TL
Nitrogen, Ammonia	0.105		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:23	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:38	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-07
Client ID: OF-211
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 11:40
Date Received: 05/21/21
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 (MF)	ND		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Turbidity	0.42		NTU	0.20	--	1	-	05/21/21 18:55	121,2130B	AS
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/27/21 11:10	121,2540D	AC
Chloride	84.		mg/l	1.0	--	1	-	06/09/21 00:38	121,4500CL-E	TL
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:27	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:39	121,5540C	AW

Project Name: STOUGHTON F14 MS4
Project Number: R282.2007

Lab Number: L2126983
Report Date: 06/10/21

SAMPLE RESULTS

Lab ID: L2126983-08
Client ID: OF-207
Sample Location: STOUGHTON, MA

Date Collected: 05/21/21 12:00
Date Received: 05/21/21
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 (MF)	33		col/100ml	2.0	NA	2	-	05/21/21 16:05	121,9222D	JT
E. Coli (MPN)	410.58		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab										
Turbidity	0.92		NTU	0.20	--	1	-	05/21/21 18:55	121,2130B	AS
Solids, Total Suspended	28.		mg/l	5.0	NA	1	-	05/27/21 11:10	121,2540D	AC
Chloride	220		mg/l	10	--	10	-	06/08/21 23:29	121,4500CL-E	TL
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:28	121,4500NH3-BH	AT
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:39	121,5540C	AW

Project Name: STOUGHTON F14 MS4 **Lab Number:** L2126983

Project Number: R282.2007 **Report Date:** 06/10/21

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): 01-08 Batch: WG1502190-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	05/21/21 16:05	121,9222D	JT
Microbiological Analysis - Westborough Lab for sample(s): 01-08 Batch: WG1502191-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/21/21 16:05	121,9223B	JT
General Chemistry - Westborough Lab for sample(s): 07-08 Batch: WG1502268-1										
Turbidity	ND		NTU	0.20	--	1	-	05/21/21 18:55	121,2130B	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1502328-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 01:30	05/22/21 05:25	121,5540C	AW
General Chemistry - Westborough Lab for sample(s): 03-08 Batch: WG1502329-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 06:30	05/22/21 09:35	121,5540C	AW
General Chemistry - Westborough Lab for sample(s): 07-08 Batch: WG1504459-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/27/21 11:10	121,2540D	AC
General Chemistry - Westborough Lab for sample(s): 01-08 Batch: WG1508771-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/08/21 02:32	06/09/21 19:02	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01-08 Batch: WG1509285-1										
Chloride	ND		mg/l	1.0	--	1	-	06/08/21 22:26	121,4500CL-E	TL

Project Name:	STOUGHTON F14 MS4	**Lab Number:**	L2126983
Project Number:	R282.2007	**Report Date:**	06/10/21

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 F14 MS4	**Lab Number:**	L2126983
Project Number:	R282.2007	**Report Date:**	06/10/21

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 at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). 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

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Project Number:	R282.2007	**Report Date:**	06/10/21

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.

Report Format: Data Usability Report

Project Name:	STOUGHTON F14 MS4	**Lab Number:**	L2126983
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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 _____ OF _____

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126983

Client Information

Client: Environmental Partners
Address: 1900 Crown Colony Drive #402 Quincy, MA
Phone: 207 939 3883
Email: ael@env.partners.com
sd+@env.partners.com

Additional Project Information:
Mass NPDES MS4

Project Information

Project Name: Stoughton F421 MS4
Project Location: Stoughton, Ma
Project #: RZ82.2007
Project Manager: Scott Turner
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP 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 _____

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
- Fecal Coliform i.e. coli
- Chloride
- Surfactants
- Ammonia
- Turbidity
- TSS

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Sample Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Fecal Coliform i.e. coli	Chloride	Surfactants	Ammonia	Turbidity	TSS	Total # Bottles
26983 01	OF-792	5/21	8:10	water	SB	X	X	X	X			
02	OF-788	5/21	8:45			X	X	X	X			
03	OF-580	5/21	9:30			X	X	X	X			
04	OF-322	5/21	10:20			X	X	X	X			
05	OF-324	5/21	10:40			X	X	X	X			
06	OF-453	5/21	11:00			X	X	X	X			
07	OF-211	5/21	11:40			X	X	X	X	X	X	
08	OF-207	5/21	12:00			X	X	X	X	X	X	

Container Type												
Preservative												

Container Type												B P P P P P P
Preservative												H A A D A A A

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
Jaymie Bousquet	5/21/21	MCM MultiAA	5/24/21 1220
MCM	5/24/21 1315		05/21/21 1315

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

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

Project Name: RE-SAMPLING
Project Number: R282.2007

Lab Number: L2134398
Report Date: 07/13/21

SAMPLE RESULTS

Lab ID: L2134398-01
Client ID: OF-440
Sample Location: WHITMAN STOUGHTON

Date Collected: 06/24/21 13:20
Date Received: 06/24/21
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 (MF)	760		col/100ml	10	NA	10	-	06/24/21 19:05	121,9222D	JT
E. Coli (MPN)	1203.33		MPN/100ml	1	NA	1	-	06/24/21 20:50	121,9223B	JT

Project Name: RE-SAMPLING
Project Number: R282.2007

Lab Number: L2134398
Report Date: 07/13/21

SAMPLE RESULTS

Lab ID: L2134398-03
Client ID: OF-378
Sample Location: WHITMAN STOUGHTON

Date Collected: 06/24/21 13:35
Date Received: 06/24/21
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 (MF)	38		col/100ml	2.0	NA	2	-	06/24/21 19:05	121,9222D	JT
E. Coli (MPN)	40.2		MPN/100ml	1	NA	1	-	06/24/21 20:50	121,9223B	JT

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 6/24/21

ALPHA Job #: L2134398

Client Information

Client: Environmental Partners
Address: 1900 Clown Colony Dr #402 Quincy MA
Phone: 2079343883
Email: aet@envpartners.com

Project Information

Project Name: Re-sampling
Project Location: Whitman Stoughton
Project #:
Project Manager: Nathalie Lewis
ALPHA Quote #: no charge - resampling

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

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 _____

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
ecoli
fecal coliform

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	Sample Comments	TOTAL # BOTTLES
34398-01	OF-440	6/24/21	1320	water	AT		2
-02	OF-56		1235				2
-03	OF-378		1335				2

Container Type												B	B						
Preservative												H	H						

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 Tucker	6/24/21 14:55	Benjamin Swett ARL	6/24 14:53
Benjamin Swett ARL	6/24 15:00	Mona Beaver	6/24/21 1500

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

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

Certification

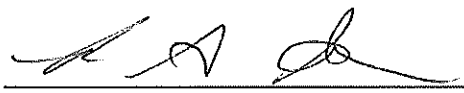
Authorized Representative (Optional): All reports, including SWPPPs, inspection reports, annual reports, monitoring reports, reports on training and other information required by this permit must be signed by a person described in Appendix B, Subsection 11.A or by a duly authorized representative of that person in accordance with Appendix B, Subsection 11.B. If there is an authorized representative to sign MS4 reports, there must be a signed and dated written authorization.
The authorization letter is:

☐ Attached to this document (document name listed below)

☐ Publicly available at the website below

"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 | Robin A Grimm

Signature  Date | 9/22/21

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:	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

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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

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

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

Client Information

Client: Environmental Partners
Address: 1900 Crown Colony Dr #402
Quincy MA
Phone: 207 939 3883
Email: aet@envpartners.com

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 #:

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
E.Coli + Fecal Coliform
Surfactants
TRC
Ammonia
Total Phosphorus

SAMPLE INFO
Filtration
☐ Field
☑ Lab to do
Preservation
☑ Lab to do

Sample Comments

TOTAL # BOTTLES

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler Initials | | |

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

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

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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

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.

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
Annie Tucker – Project Scientist, Environmental Partners

Subject: FY22 Illicit Discharge Detection & Elimination (IDDE) Catchment Investigations Findings and Recommendations

This memorandum summarizes the FY22 Illicit Discharge Detection & Elimination (IDDE) catchment investigations, outlined in Task 2A 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). In accordance with the 2016 Massachusetts MS4 General Permit, the Town of Stoughton must perform catchment investigations at each of the Town's catchments by the end of the Permit term (i.e., Year 10).

In March, April, and May 2022, EP personnel visited 62 catchments during dry weather conditions. The catchment investigations for 53 of the 62 catchments are considered complete. Catchments were selected based on the Town's outfall-catchment ranking table included in the Illicit Discharge Detection and Elimination Plan. EP visited all catchments identified as high priority that do not require the assistance of a police detail. Additionally, when EP staff investigated a high priority catchment next to a low priority catchment, that low priority location would also be investigated for efficiency. The locations of the catchments screened are shown in *Figure 1: FY22 Catchment Investigation Locations* and listed in *Table 1: FY22 Catchment Investigation Locations*. Any mapping updates identified within GIS are also noted within *Table 1*.

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 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, and
- If no evidence of illicit connections were found, the dry weather IDDE investigation is considered complete, pending system vulnerability factor (SVF) inventory, refined catchment delineation, and any catchment mapping updates identified.

Following the field work, EP and the Town collaborated to identify the presence or absence of SVFs for each catchment visited. This evaluation is included in *Table 3: SVF Assessment.* Additionally, we also uses LiDAR and contour GIS data to delineate the catchments for each of the 62 outfalls visited. Refined catchment delineations are shown in *Figure 2*.

Catchment Investigation Findings

A summary of the field sampling results is presented in *Table 2: Field Test Kit Results*. There are some structures that need maintenance, and further mapping updates are required. These instances are summarized in *Table 1.* Also attached to this report is a map for each catchment visited that includes field notes, Town actions needed, and notes regarding GIS updates. Catch basin/manhole inspection forms are also attached.

Of the 62 catchments visited, five catchments had indicators of potential illicit discharges and require additional follow-up. None of these catchments qualify as "Problem Outfalls" based on the MS4 Permit definition. However, based on the field observations and sampling results, follow-up is needed before the catchment investigation can be considered complete.

- OF-154 – 31 Alpine Way
  - A garden hose was identified entering CB-670 from #102 Chrisholm Road. The Town should determine what the residents are discharging into the MS4. The property has a residential aboveground pool.
- OF-324 – 62 Kotlik Street
  - A significant number of dog waste bags were observed in CB-593 and at the outfall. The dog waste bags should be removed. Additionally, the Town should consider sending an educational message about dog waste to the neighborhood or consider another solution.

- OF-350 – 14 Dino Drive
    - On May 16, 2022, MH-496 was sampled at each of its three inlets. Total chlorine was detected at the inlet from the west at a concentration of greater than 3.4 mg/L, which exceeds the MS4 Permit threshold of detectable levels of chlorine. Ammonia was detected at 1.0 mg/L, above its threshold of 0.5 mg/L.
    - The upstream structures were observed to be dry. Therefore, the high-chlorine stormwater may be entering the drainage system via an unmapped pipe.
    - These results suggest there may be an illicit discharge entering the system between MH-496 and MH-495. The Town should consider videoing that length of pipe, conducting a smoke test, or another method to confirm the source of the illicit connection.
- OF-458 – Flynn Road
    - On March 30, 2022, MH-1969 was sampled and surfactants (also known as detergents) was detected at 3.0 mg/L, which exceeds its criteria threshold of 0.25 mg/L. Total chlorine was detected at a concentration of 0.6 mg/L, which also exceeds the MS4 Permit threshold of detectable chlorine.
    - On April 11, 2022, MH-688 was sampled and surfactants were detected at 1.5 mg/L, and total chorine was detected at a concentration of 0.7 mg/L. Since this catchment channels a culverted stream, the stream was observed and noted to have suds.
    - On June 29, 2022, MH-688 was re-sampled and surfactants were detected at 0.5 mg/L and total chorine was detected at a concentration of 1.1 mg/L. The stream was also sampled and surfactants were detected at 0.5 mg/L and total chorine at 0.1 mg/L.
    - These results suggest there may be an illicit discharge entering this catchment or the stream upstream of the catchment. Further investigation is needed to isolate and confirm the source of the illicit and determine appropriate removal actions.
- OF-459 – Fraser Road
    - On March 20, 2022, MH-681, MH-684, and MH-686 were sampled and surfactants were detected between a concentration of 0.5 mg/L and 2 mg/L. Additionally, total chlorine was detected at two of the three manholes sampled.
    - MH-684 was revisited on June 29, 2022, and it was dry.
    - These results suggest there may be an intermittent illicit discharge entering this catchment or the stream upstream of the catchment. Further investigation is needed to confirm the existence of an illicit discharge and, if present, remove the connection.

While investigating catchments, pipes entering the MS4 from unknown sources were noted. These pipes may be residential area drains or roof drains, an illicit connection, or something else. The Town should locate the sources of the following pipes and determine if the pipes contain allowable discharges or illicit discharges:

- OF-42 – 38 Valley Drive
    - Pipe entering system from around #54 Amherst Street
    - Pipe entering system from around #13 Ralph Mann Drive
- OF-444 – Rocky Knoll Drive
    - Pipe entering system from around #70 Connie Lane

- OF-636 – Carson Drive
    - Pipe entering system from between #23 and #29 Sander Lane
- OF-745 – 1 Cedar Street
    - Pipe entering from west of the Cedar Street culvert
    - Four dangling pipes on the South Elementary School property

Additionally, some catchments were visited but the investigations could not be completed. The reason for the incompleteness and Town actions needed are described below:

- OF-109 – D Street
    - MH-2032 and MH-2033 need to be located and opened. Additionally, MH-2033 should be located as well. Both are likely are buried in dirt.
- OF-204 – 36 Palisades Circle
    - MH-300 was unable to be opened. The Town should open this manhole.
- OF-217 – 42 Ash Park Drive
    - MH-760 was unable to be opened. The Town should open that manhole or another manhole closer to the outfall.
- OF-243 – 279 William Kelley Road
    - MH-746 or MH-1905 were unable to be opened. The Town should open these manholes.
- OF-251 – 52 Jordan Drive
    - MH-1906 was unable to be opened. The Town should open this manhole.
- OF-323 – 108 Kotlik Street
    - MH-324 was unable to be opened. The Town should open this manhole.
- OF-378 – Highland Street
    - CB-1679 needs to be cleaned.
- OF-553 – Lake Drive
    - MH-2198 was unable to be opened. The Town should open this manhole.

Lastly, OF-143 near 60 Whitten Ave was determined to be an outlet for a culvert and does not receive stormwater. This was confirmed by as-built drawings, field verification, and discussions with the Town. This catchment has been removed from the Town's MS4 inventory.

Recommendations

In conclusion, EP recommends the following:

1. **Complete follow-up on outfalls OF-154, OF-324, OF-350, OF-458, and OF-459, and document any actions taken. See the attached catchment figures for more details.**
2. **Complete the recommended actions for the 8 incomplete catchments. See the attached catchment figures for more details.**
3. Continue IDDE catchment investigations, investigating a portion of the remaining catchments each year for the next 5 years.
4. Continue performing wet weather sampling at outfalls within catchments that have at least one SVF identified.

Attachments

Certification Page
Table 1: FY22 Catchment Investigations Locations
Table 2: Stormwater Field Test Kit Results
Table 3: SVF Assessment
Figure 1: FY22 Catchment Investigation Locations
Figure 2: Refined Outfall-Catchment Delineations
Catchment Packages for Catchments that Require Town Follow-up
- Catchment of OF-154
- Catchment of OF-324
- Catchment of OF-350
- Catchment of OF-458
- Catchment of OF-459

Catchment Packages for Catchments that Require Town Action to Complete
- Catchment of OF-109
- Catchment of OF-204
- Catchment of OF-217
- Catchment of OF-243
- Catchment of OF-251
- Catchment of OF-323
- Catchment of OF-378
- Catchment of OF-553

Catchment Packages for Catchments that are Complete
- All Remaining Catchments

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

Table 1: FY22 Catchment Investigation Locations

Outfall ID	Approximate Street Address	Receiving Water	Outfall-catchment Priority	Catchment Investigation Date	Mapping Notes	Flow Present	Catchment Investigation Status	Maintenance Needed
OF-38	101 Trowbridge Circle	Beaver Meadow Brook	High	2022-03-30		No	Complete	
OF-39	97 Deady Avenue	Beaver Meadow Brook	High	2022-03-23		No	Complete	
OF-42	38 Valley Drive	Unnamed Tributary to Beaver Meadow Brook	High	2022-03-30		No	Initial catchment investigation complete - Town to investigate pipes entering system from #54 Amherst St and #13 Ralph Mann Dr	Outfall pipe is being eroded and may need maintenance. See photo. Resident reported ponding at leaching catch basin CB-865
OF-108	83 Tanglewood Drive	Unnamed Tributary to Beaver Brook	High	2022-03-22		Yes	Complete	
OF-144	4 Robert Scott Way	Unnamed Tributary near Woods Pond	Low	2022-05-16	Two catch basins mapped	No	Complete	
OF-148	161 Rogers Drive	Unnamed Tributary to Steep Hill Brook	High	2022-03-23		Yes	Complete	
OF-150	4 Blackstone Street	Unnamed Tributary to Steep Hill Brook	High	2022-03-22		No	Complete	
OF-152	34 Poskus Street	Unnamed Tributary to Town Pond	Low	2022-05-16		No	Complete	
OF-153	34 Poskus Street	Unnamed Tributary to Town Pond	Low	2022-05-16		No	Complete	CB-588 rim started to come up when we lifted grate
OF-154	31 Alpine Way	Unnamed Tributary to Town Pond	Low	2022-05-16		No	Initial investigation complete - but hose from #102 Chrisholm Rd to CB-670 needs to be investigated	MH-369, MH-339, MH-341, MH-370, and MH-365 were stuck
OF-156	497 School Street	Unnamed Tributary to Steep Hill Brook	High	2022-03-22	CB-2844 is actually a scupper	No	Complete	
OF-159	15 Walters Way	Unnamed Tributary to Ames Long Pond	High	2022-04-13		No	Complete	
OF-193	94 York Street	Beaver Meadow Brook	High	2022-03-23		No	Complete	Headwall is in poor condition. Sedimentation at outlet suggests flooding is possible
OF-202	216 Palisades Circle	Ames Long Pond	High	2022-03-23		No	Complete	
OF-203	1725 West Street	Ames Long Pond	High	2022-03-23		No	Complete	
OF-209	31 Alpine Way	Unnamed Tributary to Town Pond	Low	2022-05-16		No	Complete	

Table 1: FY22 Catchment Investigation Locations

Outfall ID	Approximate Street Address	Receiving Water	Outfall-catchment Priority	Catchment Investigation Date	Mapping Notes	Flow Present	Catchment Investigation Status	Maintenance Needed
OF-226	10 Chipman Lane	Unnamed Tributary near Woods Pond	Low	2022-05-16	Inlet and CB mapped; drainage updates still needed at southern cul-de-sac	No	Complete	Outfall partially covered by debris perhaps due to residents dumping yard waste
OF-231	116 Shirley Rd	Unnamed Tributary to Dorchester Brook	Low	2022-05-16		No	Complete	Significant debris/sediment at outfall, suggesting ponding is likely
OF-242	9 Hunt Drive	Woods Pond	Low	2022-05-16		No	Complete	
OF-244	223 William Kelley Road	Unnamed Wetlands to Beaver Brook	High	2022-03-22		No	Complete	
OF-245	170 William Kelley Road	Unnamed Wetlands to Beaver Brook	High	2022-03-22		No	Complete	
OF-246	27 William Kelley Road	Dorchester Brook	High	2022-03-22		Yes	Complete	
OF-249	25 Jordan Drive	Unnamed Tributary to Ames Long Pond	High	2022-04-13		No	Complete	Outfall was 50% full of debris; oil film noted in MH-1605, potentially from residential inlet
OF-279	79 Rocky Knoll Drive	Unnamed Tributary To Beaver Brook	High	2022-03-23		No	Complete	
OF-286	Pondview Ln	Beaver Meadow Brook	High	2022-03-23	Catchment connectivity updated - see map	No	Complete	
OF-306	90 Trowbridge Circle	Beaver Meadow Brook	High	2022-03-30		No	Complete	
OF-324	62 Kotlik Street	Unnamed Tributary to Steep Hill Brook	High	2022-05-23		Yes	Initial investigation complete - Dog waste bags in CB-593 and at outfall need to be removed	Rim started coming up at MH-359
OF-334	102 Deady Avenue	Beaver Meadow Brook	High	2022-03-23		No	Complete	
OF-350	24 Dino Drive	Unnamed Tributary to Steep Hill Brook	High	2022-05-16	New outlet pipe from MH-2034 mapped - original outlet pipe may not exist	Yes	Signs of illicit discharges identified - follow up is needed	MH-495 was stuck
OF-351	103 Walters Way	Unnamed Tributary to Ames Long Pond	High	2022-04-13		No	Complete	
OF-366	Ledgebrook Ave	Unnamed Wetlands to Beaver Brook	High	2022-03-23	Connectivity updated - see map	No	Complete	Outfall has sediment buildup creating ponding
OF-367	Carson Dr	Unnamed Wetlands to Beaver Brook	High	2022-03-22		No	Complete	Manhole pipes partially filled with sediment
OF-376	Highland St	Ames Long Pond	High	2022-03-23		Yes	Complete	
OF-426	40 Ladyslipper Lane	Unnamed Tributary to Beaver Brook	High	2022-03-30		No	Complete	

Table 1: FY22 Catchment Investigation Locations

Outfall ID	Approximate Street Address	Receiving Water	Outfall-catchment Priority	Catchment Investigation Date	Mapping Notes	Flow Present	Catchment Investigation Status	Maintenance Needed
OF-431	230 Curtis Ave	Unnamed Tributary to Beaver Brook	High	2022-04-11		No	Complete	BMP-84 needs maintenance
OF-432	218 Curtis Ave	Unnamed Tributary to Beaver Brook	High	2022-03-30		No	Complete	
OF-444	Rocky Knoll Dr	Unnamed Tributary To Beaver Brook	High	2022-03-23	Connectivity of CB-1456 needs updating	No	Initial investigation Complete - but source of pipe entering system at #70 Connie Lane needs to be identified	Sediment has built-up at MH-869 outlet; inlet to nearby culvert is partially blocked due to concrete cave-in
OF-450	75 Sheehan Street	Unnamed Tributary to Steep Hill Brook	High	2022-04-11		No	Complete	Outfall partially covered by debris
OF-455	102 Deady Avenue	Beaver Meadow Brook	High	2022-03-23		No	Complete	
OF-456	90 Trowbridge Circle	Beaver Meadow Brook	High	2022-03-30		No	Complete	
OF-458	121 East Vanston Road	Unnamed Tributary to Beaver Brook	High	2022-03-30		Yes	Signs of illicit discharges identified - follow up is needed	MH-687 could not be located
OF-459	91 East Vanston Road	Unnamed Tributary to Beaver Brook	High	2022-03-30		Yes	Signs of illicit discharges identified - follow up is needed	
OF-465	132 Winslow Drive	Unnamed Tributary to Steep Hill Brook	High	2022-04-11		No	Complete	Outfall is buried under debris and there is evidence of localized flooding during rain events. Headwall is collapsing
OF-469	104 Winslow Drive	Unnamed Tributary to Steep Hill Brook	High	2022-04-11		No	Complete	Outfall is 80% full of debris
OF-547	131 Lake Drive	Ames Long Pond	High	2022-04-13		No	Complete	
OF-554	Lake Drive intersect w/ West St	Ames Long Pond	High	2022-04-11	MH inventoried; nearby culvert needs to be mapped	No	Complete	
OF-587	Bramblebush Rd	Unnamed Tributary to Beaver Brook	High	2022-03-22		Yes	Complete	
OF-588	189 Fifth Street	Unnamed Wetlands to Beaver Brook	High	2022-04-11		No	Complete	
OF-610	53 Barnes Road	Unnamed Tributary to Beaver Brook	High	2022-04-11		No	Complete	
OF-636	Carson Dr	Unnamed Wetlands to Beaver Brook	High	2022-03-23		Yes	Initial investigation complete - but source of pipe entering system between #29 and #23 Sander Lane needs to be identified	

Table 1: FY22 Catchment Investigation Locations

Outfall ID	Approximate Street Address	Receiving Water	Outfall-catchment Priority	Catchment Investigation Date	Mapping Notes	Flow Present	Catchment Investigation Status	Maintenance Needed
OF-664	672 West Street	Unnamed Tributary to Town Pond	Low	2022-04-11		No	Complete	
OF-745	1 Cedar Street	Unnamed Tributary to Beaver Brook	High	2022-05-23	Connectivity of CB-2983 updated; Pipe entering CB-2987 added; Pipe entering CB-2982 added	Yes	Initial investigation complete - but mapping needs to be Complete, including source of pipes entering system	CB-2983 and CB-3380 need to be cleaned. MH-2185 and CB-1290 were stuck and could not be opened
OF-810	27 William Kelley Road	Dorchester Brook	Low	2022-03-22		No	Complete	
OF-109	D St	Unnamed Wetlands to Beaver Brook	High	2022-03-22		No	Incomplete - Town to help open MH-2032 and 2033	CB-2609 was covered by leaves
OF-143	4 Robert Scott Way	Unnamed Tributary near Woods Pond	Low	2022-05-16	Not outfall	No	Location removed from MS4 Outfall inventory - catchment receives no stormwater	
OF-204	22 Palisades Circle	Ames Long Pond	High	2022-03-23		No	Incomplete - Town to help open MH-300	
OF-217	42 Ash Park Drive			2022-05-23		No	Incomplete - Town to help open MH-760	MH-1033 was rusted shut
OF-243	261 William Kelley Road	Unnamed Wetlands to Beaver Brook	High	2022-03-22		No	Incomplete - Town to help open MH-746 or MH-1905	
OF-251	52 Jordan Drive	Unnamed Tributary to Ames Long Pond	High	2022-04-13		No	Incomplete - Town to help open MH-1906	All inlets and outlets within BMP need maintenance
OF-323	108 Kotlik Street	Unnamed Tributary to Steep Hill Brook	High	2022-03-23	MH-2023 is actually a catch basin	Yes	Incomplete - Town help to open MH-324	
OF-378	Highland St	Ames Long Pond	High	2022-03-23		Yes	Incomplete - Town to clean CB-1679	CB-1679 needs cleaning
OF-553	Lake Drive intersect w/ West St	Ames Long Pond	High	2022-04-13		No	Incomplete - Town to help open MH-2198	

Table 2: Field Test Kit Results

Outfall ID	Structure ID	Discharging Waterbody	Date Sampled	Ammonia (mg/L) 0.5 mg/L Threshhold	Total Chlorine (mg/L) 0.1 mg/L Threshhold	Surfactants (mg/L) 0.25 mg/L Threshhold	Temp. (deg C)	pH	Specific Conductance (µs/cm)	Salinity (mg/L)	Dissolved Oxygen (mg/L)
OF-108	MH-951	Unnamed Tributary to Beaver Brook	2022-03-22	0.25	**0.40**	0.25	8.4	6.62	472.8	0.23	9.09
	MH-990		2022-03-22	0.25	**0.30**	**0.3**	8.8	6.94	680.8	0.33	13.1
	MH-721		2022-03-22	0.30	0.00	0.25	10.2	7.00	370.6	0.18	9.11
OF-148	MH-808	Unnamed Tributary to	2022-03-23	0.20	**0.40**	0.25	9.8	7.76	344	0.17	8.66
	MH-786		2022-03-23	0.20	**0.25**	0.25	7.4	7.40	754	0.37	8.83
OF-323	MH-360	Unnamed Tributary to	2022-03-23	ND	**0.30**	0.25	8.9	6.98	286.2	0.14	11.46
	MH-2023		2022-03-23	ND	**0.40**	0.25	9.0	6.66	23.1	0.13	7.75
OF-324	MH-321	Unnamed Tributary to	2022-05-23	ND	**0.50**	0.25	18.7	6.82	537.4	0.26	7.38
	OF-324		2022-05-23	ND	**0.50**	0.25	17.0	7.09	374	0.18	10.13
OF-350	MH-496 (pipe from MH-495)	Unnamed Tributary to Steep Hill Brook	2022-05-16	**1.00**	**3.40**	0.25	15.8	7.24	642		
	MH-496 (pipe from MH-2035)		2022-05-16	ND	**0.30**	0.25	12.4	6.64	512.3		
	MH-496 (pipe from MH-528)		2022-05-16	ND	**0.80**	0.25	15.1	6.60	516.5		
OF-376	MH-1603	Ames Long Pond	2022-03-23	ND	**0.50**	0.25	11.1	6.97	923	0.46	8.16
OF-458	MH-1969	Unnamed Tributary to	2022-03-30	ND	**0.60**	**3**	4.5	5.76	322.1	0.15	11.43
	MH-688		2022-03-30	ND	**0.70**	**1.5**	11.5	8.23	293.9	0.14	
OF-459	MH-684	Unnamed Tributary to Beaver Brook	2022-03-30	ND	**0.20**	**2**	8.2	6.51	685		7.21
	MH-681		2022-03-30	0.10	ND	**1.5**	8.4	5.79	577.7		8.23
	MH-686		2022-03-30	ND	**0.20**	**0.5**	7.6	5.66	662.1	0.32	6.27
OF-587	MH-748	Unnamed Tributary to Beaver Brook	2022-03-22	0.25	ND	0.25	6.7	7.99	198.5	0.09	9.56

Table 2: Field Test Kit Results

Outfall ID	Structure ID	Discharging Waterbody	Date Sampled	Ammonia (mg/L) 0.5 mg/L Threshhold	Total Chlorine (mg/L) 0.1 mg/L Threshhold	Surfactants (mg/L) 0.25 mg/L Threshhold	Temp. (deg C)	pH	Specific Conductance (µs/cm)	Salinity (mg/L)	Dissolved Oxygen (mg/L)
OF-636	MH-2	Unnamed Wetlands to Beaver Brook	2022-03-23	ND	**0.20**	0.25	9.3	7.21	817	0.4	7.02
OF-745	MH-1799	Unnamed Tributary to Beaver Brook	2022-05-23	ND	**0.50**	0.25	16.3	8.67	463.8	0.22	7.74
	MH-758		2022-05-23	ND	**0.20**	ND	15.7	7.93	217.8	0.1	7.48
	MH-770		2022-05-23	ND	**0.50**	ND	23.5	6.69	229.3	0.11	6.56

Bold values exceed contaminant criteria
ND is non-detect

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-100	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook						X	N/A						X
OF-103	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook						X	N/A						X
OF-104	200 Shuman Avenue	Unnamed Tributary to Brockton Reservoir						X	N/A						X
OF-105	75 Campanelli Parkway	Lovett Brook						X	N/A						
OF-108	83 Tanglewood Drive	Unnamed Tributary to Beaver Brook							N/A						
OF-109	D St	Unnamed Wetlands to Beaver Brook						X	N/A						X
OF-144	4 Robert Scott Way	Unnamed Tributary near Woods Pond							N/A						
OF-148	161 Rogers Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-150	4 Blackstone Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-152	34 Poskus Street	Unnamed Tributary to Town Pond							N/A						
OF-153	34 Poskus Street	Unnamed Tributary to Town Pond							N/A						
OF-154	31 Alpine Way	Unnamed Tributary to Town Pond							N/A						
OF-156	497 School Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-159	15 Walters Way	Unnamed Tributary to Ames Long Pond							N/A					X	
OF-193	94 York Street	Beaver Meadow Brook							N/A						
OF-202	216 Palisades Circle	Ames Long Pond						X	N/A						X
OF-203	1725 West Street	Ames Long Pond						X	N/A						X
OF-204	22 Palisades Circle	Ames Long Pond						X	N/A						X
OF-207	426 Highland Street	Ames Long Pond						X	N/A						
OF-209	31 Alpine Way	Unnamed Tributary to Town Pond							N/A						

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-211	524 Highland Street	Ames Long Pond						X	N/A						
OF-226	10 Chipman Lane	Unnamed Tributary near Woods Pond							N/A						
OF-231	116 Shirley Rd	Unnamed Tributary to Dorchester Brook				X			N/A						
OF-242	9 Hunt Drive	Woods Pond							N/A						
OF-243	261 William Kelley Road	Unnamed Wetlands to Beaver Brook							N/A						
OF-244	223 William Kelley Road	Unnamed Wetlands to Beaver Brook							N/A						
OF-245	170 William Kelley Road	Unnamed Wetlands to Beaver Brook				X			N/A						
OF-246	27 William Kelley Road	Dorchester Brook							N/A						
OF-249	25 Jordan Drive	Unnamed Tributary to Ames Long Pond							N/A						
OF-251	52 Jordan Drive	Unnamed Tributary to Ames Long Pond							N/A						
OF-279	79 Rocky Knoll Drive	Unnamed Tributary To Beaver Brook							N/A						
OF-286	Pondview Ln	Beaver Meadow Brook							N/A						
OF-306	90 Trowbridge Circle	Beaver Meadow Brook							N/A						
OF-323	108 Kotlik Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-324	62 Kotlik Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-334	102 Deady Avenue	Beaver Meadow Brook							N/A						
OF-350	24 Dino Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-351	103 Walters Way	Unnamed Tributary to Ames Long Pond							N/A						
OF-366	Ledgebrook Ave	Unnamed Wetlands to Beaver Brook							N/A						
OF-367	Carson Dr	Unnamed Wetlands to Beaver Brook							N/A						
OF-376	Highland St	Ames Long Pond						X	N/A						X
OF-378	Highland St	Ames Long Pond						X	N/A						X

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-38	101 Trowbridge Circle	Beaver Meadow Brook							N/A						
OF-380	28 Smyth Street	Unnamed Tributary to Dorchester Brook						X	N/A						
OF-39	97 Deady Avenue	Beaver Meadow Brook							N/A						
OF-42	38 Valley Drive	Unnamed Tributary to Beaver Meadow Brook	X						N/A						
OF-426	40 Ladyslipper Lane	Unnamed Tributary to Beaver Brook							N/A						
OF-431	230 Curtis Ave	Unnamed Tributary to Beaver Brook							N/A						
OF-432	218 Curtis Ave	Unnamed Tributary to Beaver Brook							N/A						
OF-444	Rocky Knoll Dr	Unnamed Tributary To Beaver Brook							N/A						
OF-450	75 Sheehan Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-455	102 Deady Avenue	Beaver Meadow Brook							N/A						
OF-456	90 Trowbridge Circle	Beaver Meadow Brook							N/A						
OF-458	121 East Vanston Road	Unnamed Tributary to Beaver Brook							N/A						
OF-459	91 East Vanston Road	Unnamed Tributary to Beaver Brook							N/A						
OF-465	132 Winslow Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-469	104 Winslow Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-547	131 Lake Drive	Ames Long Pond						X	N/A						X
OF-553	Lake Drive intersect w/ West St	Ames Long Pond						X	N/A						X
OF-554	Lake Drive intersect w/ West St	Ames Long Pond						X	N/A						X
OF-567	1096 Park Street	Lovett Brook	X					X	N/A						

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-57	1518 Washington Street	Unnamed Tributary to Dorchester Brook						X	N/A						
OF-587	Bramblebush Rd	Unnamed Tributary to Beaver Brook							N/A						
OF-588	189 Fifth Street	Unnamed Wetlands to Beaver Brook						X	N/A						X
OF-610	53 Barnes Road	Unnamed Tributary to Beaver Brook							N/A						
OF-636	Carson Dr	Unnamed Wetlands to Beaver Brook							N/A						
OF-664	672 West Street	Unnamed Tributary to Town Pond							N/A						
OF-694	951 Pleasant Street	Unnamed Tributary To Beaver Brook	X					X	N/A						
OF-745	1 Cedar Street	Unnamed Tributary to Beaver Brook							N/A						
OF-77	1709 West Street	Ames Long Pond						X	N/A						
OF-810	27 William Kelley Road	Dorchester Brook							N/A						
OF-98	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook						X	N/A						X
OF-99	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook 1						X	N/A						X

For catchments with septic systems, "Inadequate Sanitary Level of Service" was partially determined by evaulating the Sewer Ranking Plan, published in November 2015 by Kleinfelder
"Inadequare Sanitary Level of Service" was also determined by conversations with the Town
"History of BOH Actions Addressing Septic Failure" was evaulated by information provided by the Board of Health
"Storm/Sanitary Crossings" was determined by GIS data and historical as-built plans
"History of SSOs" was determined by the SSO Inventory located within the IDDE Plan

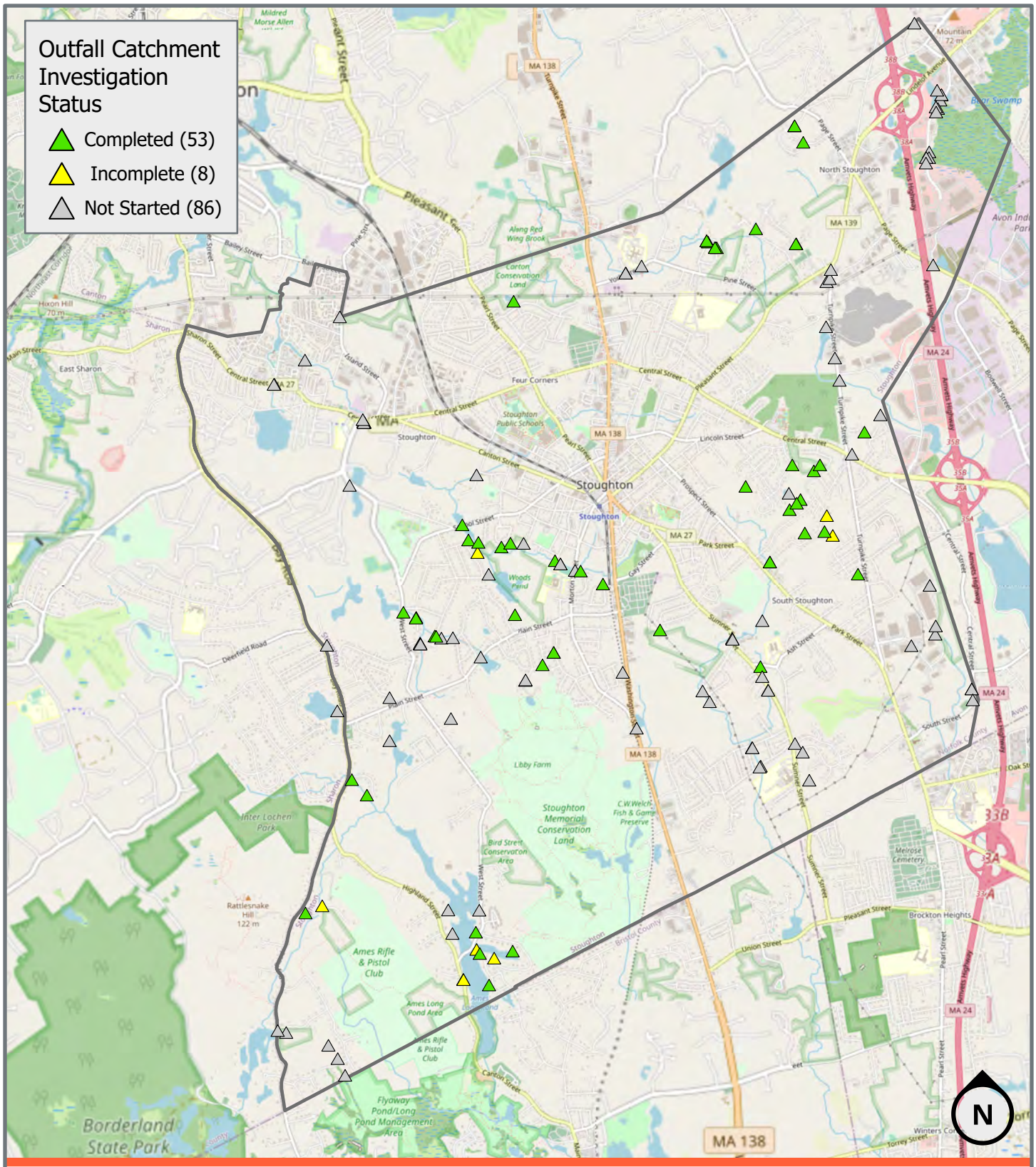


Figure 1: FY22 Catchment Investigation Locations

Stoughton, MA

0 0.5 1 Miles

ENVIRONMENTAL PARTNERS
— An Apex Company —

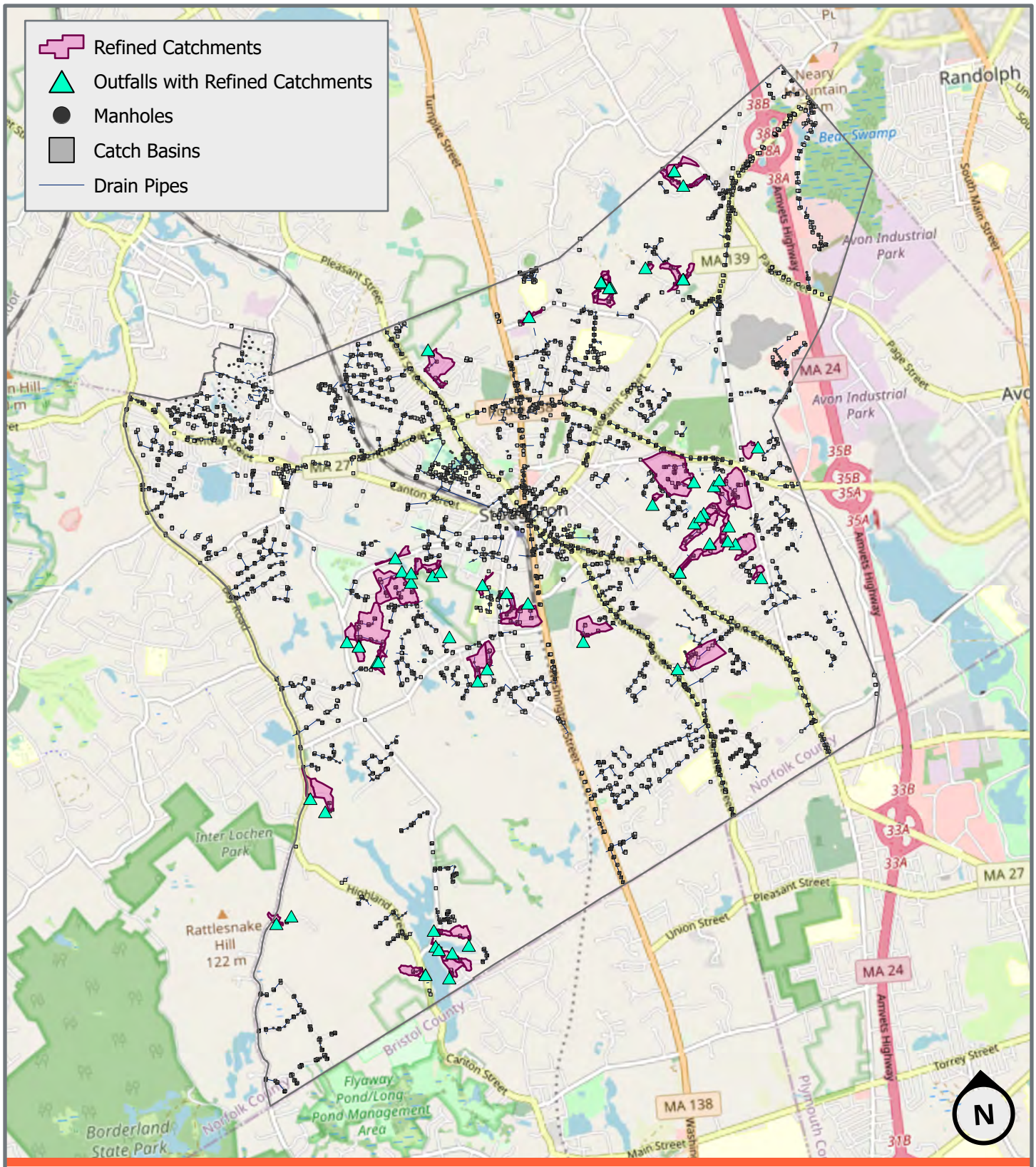


Figure 2: Refined Outfall-Catchment Delineations

Stoughton, MA

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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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-100	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook						X	N/A						X
OF-103	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook						X	N/A						X
OF-104	200 Shuman Avenue	Unnamed Tributary to Brockton Reservoir						X	N/A						X
OF-105	75 Campanelli Parkway	Lovett Brook						X	N/A						
OF-108	83 Tanglewood Drive	Unnamed Tributary to Beaver Brook							N/A						
OF-109	D St	Unnamed Wetlands to Beaver Brook						X	N/A						X
OF-144	4 Robert Scott Way	Unnamed Tributary near Woods Pond							N/A						
OF-148	161 Rogers Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-150	4 Blackstone Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-152	34 Poskus Street	Unnamed Tributary to Town Pond							N/A						
OF-153	34 Poskus Street	Unnamed Tributary to Town Pond							N/A						
OF-154	31 Alpine Way	Unnamed Tributary to Town Pond							N/A						
OF-156	497 School Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-159	15 Walters Way	Unnamed Tributary to Ames Long Pond							N/A					X	
OF-193	94 York Street	Beaver Meadow Brook							N/A						
OF-202	216 Palisades Circle	Ames Long Pond						X	N/A						X
OF-203	1725 West Street	Ames Long Pond						X	N/A						X
OF-204	22 Palisades Circle	Ames Long Pond						X	N/A						X
OF-207	426 Highland Street	Ames Long Pond						X	N/A						
OF-209	31 Alpine Way	Unnamed Tributary to Town Pond							N/A						

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-211	524 Highland Street	Ames Long Pond						X	N/A						
OF-226	10 Chipman Lane	Unnamed Tributary near Woods Pond							N/A						
OF-231	116 Shirley Rd	Unnamed Tributary to Dorchester Brook				X			N/A						
OF-242	9 Hunt Drive	Woods Pond							N/A						
OF-243	261 William Kelley Road	Unnamed Wetlands to Beaver Brook							N/A						
OF-244	223 William Kelley Road	Unnamed Wetlands to Beaver Brook							N/A						
OF-245	170 William Kelley Road	Unnamed Wetlands to Beaver Brook				X			N/A						
OF-246	27 William Kelley Road	Dorchester Brook							N/A						
OF-249	25 Jordan Drive	Unnamed Tributary to Ames Long Pond							N/A						
OF-251	52 Jordan Drive	Unnamed Tributary to Ames Long Pond							N/A						
OF-279	79 Rocky Knoll Drive	Unnamed Tributary To Beaver Brook							N/A						
OF-286	Pondview Ln	Beaver Meadow Brook							N/A						
OF-306	90 Trowbridge Circle	Beaver Meadow Brook							N/A						
OF-323	108 Kotlik Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-324	62 Kotlik Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-334	102 Deady Avenue	Beaver Meadow Brook							N/A						
OF-350	24 Dino Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-351	103 Walters Way	Unnamed Tributary to Ames Long Pond							N/A						
OF-366	Ledgebrook Ave	Unnamed Wetlands to Beaver Brook							N/A						
OF-367	Carson Dr	Unnamed Wetlands to Beaver Brook							N/A						
OF-376	Highland St	Ames Long Pond						X	N/A						X
OF-378	Highland St	Ames Long Pond						X	N/A						X

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-38	101 Trowbridge Circle	Beaver Meadow Brook							N/A						
OF-380	28 Smyth Street	Unnamed Tributary to Dorchester Brook						X	N/A						
OF-39	97 Deady Avenue	Beaver Meadow Brook							N/A						
OF-42	38 Valley Drive	Unnamed Tributary to Beaver Meadow Brook	X						N/A						
OF-426	40 Ladyslipper Lane	Unnamed Tributary to Beaver Brook							N/A						
OF-431	230 Curtis Ave	Unnamed Tributary to Beaver Brook							N/A						
OF-432	218 Curtis Ave	Unnamed Tributary to Beaver Brook							N/A						
OF-444	Rocky Knoll Dr	Unnamed Tributary To Beaver Brook							N/A						
OF-450	75 Sheehan Street	Unnamed Tributary to Steep Hill Brook							N/A						
OF-455	102 Deady Avenue	Beaver Meadow Brook							N/A						
OF-456	90 Trowbridge Circle	Beaver Meadow Brook							N/A						
OF-458	121 East Vanston Road	Unnamed Tributary to Beaver Brook							N/A						
OF-459	91 East Vanston Road	Unnamed Tributary to Beaver Brook							N/A						
OF-465	132 Winslow Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-469	104 Winslow Drive	Unnamed Tributary to Steep Hill Brook							N/A						
OF-547	131 Lake Drive	Ames Long Pond						X	N/A						X
OF-553	Lake Drive intersect w/ West St	Ames Long Pond						X	N/A						X
OF-554	Lake Drive intersect w/ West St	Ames Long Pond						X	N/A						X
OF-567	1096 Park Street	Lovett Brook	X					X	N/A						

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	SSO Potential In Event of System Failures	Sanitary and Storm Drain Infrastructure >40 Years Old	Septic with Poor Soils or Water Table Separation	History of BOH Actions Addressing Septic Failure	Wet Weather Sampling Completed
OF-57	1518 Washington Street	Unnamed Tributary to Dorchester Brook						X	N/A						
OF-587	Bramblebush Rd	Unnamed Tributary to Beaver Brook							N/A						
OF-588	189 Fifth Street	Unnamed Wetlands to Beaver Brook						X	N/A						X
OF-610	53 Barnes Road	Unnamed Tributary to Beaver Brook							N/A						
OF-636	Carson Dr	Unnamed Wetlands to Beaver Brook							N/A						
OF-664	672 West Street	Unnamed Tributary to Town Pond							N/A						
OF-694	951 Pleasant Street	Unnamed Tributary To Beaver Brook	X					X	N/A						
OF-745	1 Cedar Street	Unnamed Tributary to Beaver Brook							N/A						
OF-77	1709 West Street	Ames Long Pond						X	N/A						
OF-810	27 William Kelley Road	Dorchester Brook							N/A						
OF-98	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook						X	N/A						X
OF-99	139 Shuman Avenue	Unnamed Wetlands near Lovett Brook 1						X	N/A						X

For catchments with septic systems, "Inadequate Sanitary Level of Service" was partially determined by evaulating the Sewer Ranking Plan, published in November 2015 by Kleinfelder
"Inadequare Sanitary Level of Service" was also determined by conversations with the Town
"History of BOH Actions Addressing Septic Failure" was evaulated by information provided by the Board of Health
"Storm/Sanitary Crossings" was determined by GIS data and historical as-built plans
"History of SSOs" was determined by the SSO Inventory located within the IDDE Plan

APPENDIX G

New England Interstate Water Pollution Control Commission

IDDE Manual

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

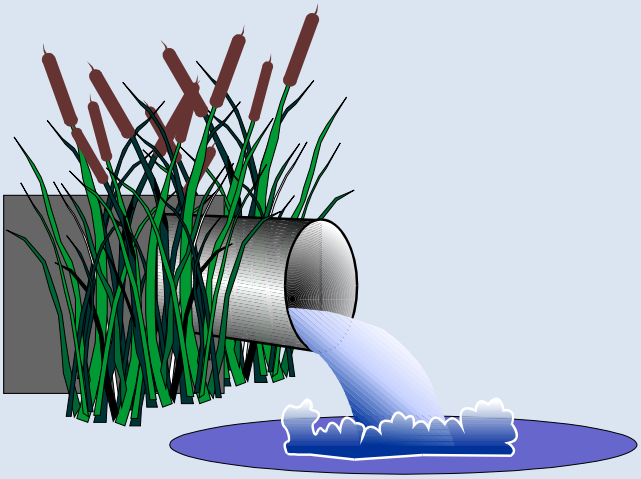
A Handbook for Municipalities

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

January 2003

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities



Prepared by the

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

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COMPACT MEMBER STATES

Connecticut
Maine
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

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January 2003

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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.

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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

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.

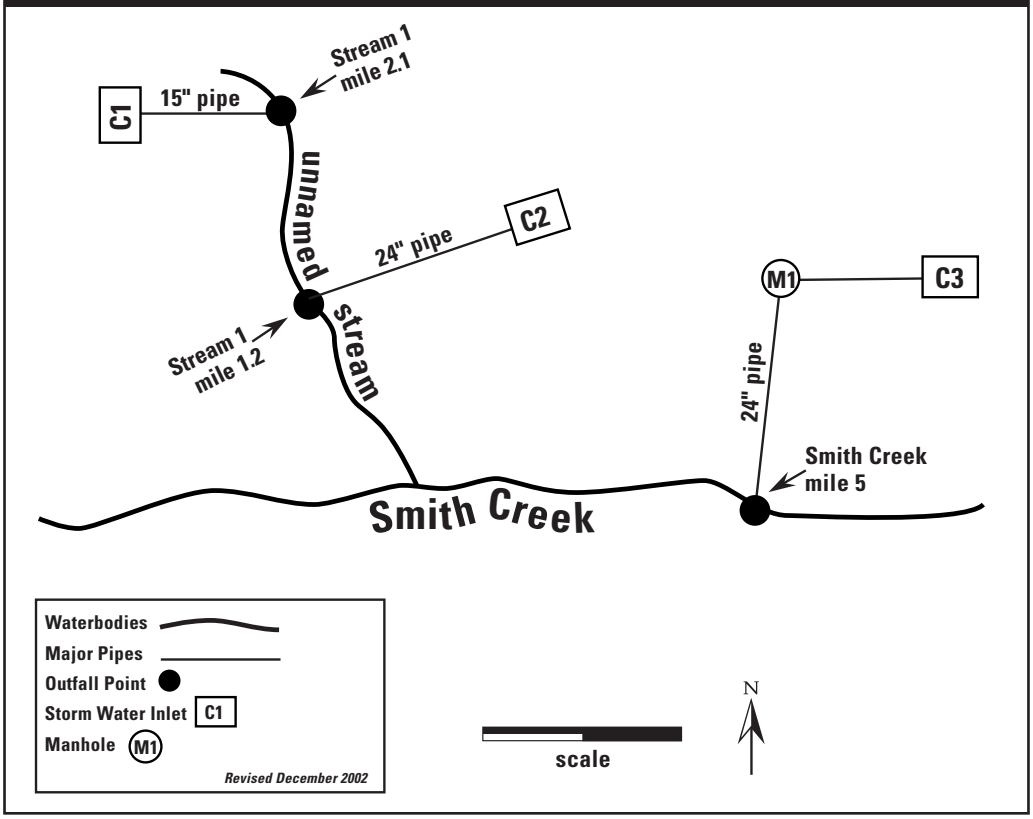
PRIORITIZING AREAS TO BE MAPPED

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



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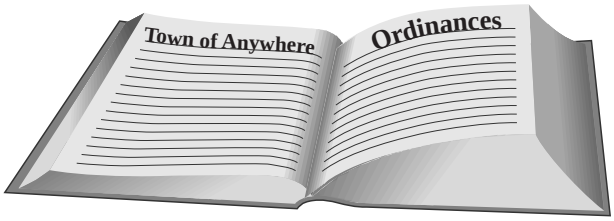
3 PROHIBITING ILLICIT DISCHARGES

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

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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)

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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*

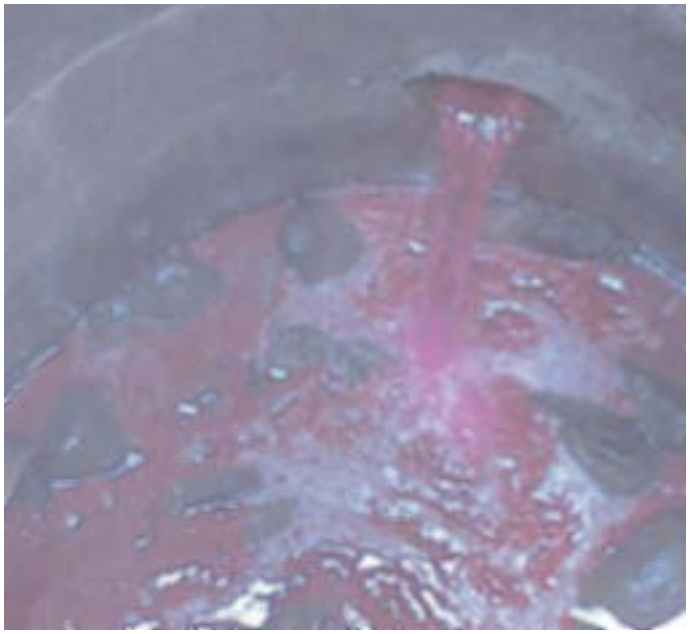
5 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: TRACING THE SOURCE OF AN ILLICIT DISCHARGE

***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.

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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/*

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*

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USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* *http://www.epa.gov/owow/nps/ordinance/discharges.htm*

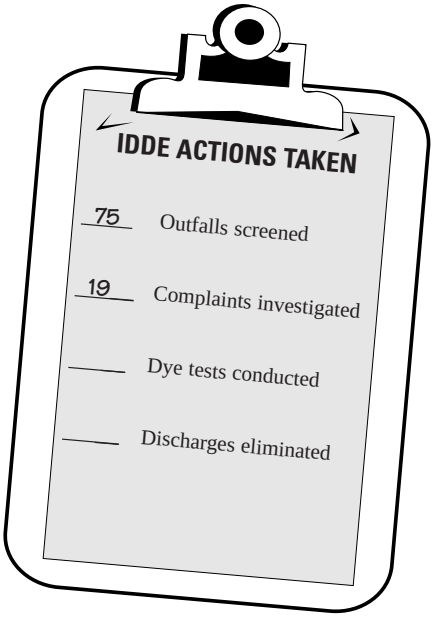
7 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: EVALUATION OF THE IDDE PROGRAM

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*

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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*

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*

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

ENVIRONMENTAL PARTNERS
— An Apex Company —

MS4 STORMWATER PERMIT IDDE TRAINING SESSION

Sign-in Sheet

Date of Training: _____

Name	Department	Email	Signature

ENVIRONMENTAL PARTNERS

— An Apex Company —

1900 Crown Colony Drive, Suite 402

Quincy, MA 02169

P: 617.657.0200 F: 617.657.0201

envpartners.com

APPENDIX M

Stormwater Pollution Prevention Plans (SWPPPs)

APPENDIX N

Municipal Facility Audit Report

ENVIRONMENTAL PARTNERS
— An Apex Company —

Memorandum

Date 08/30/19

To Marc Tisdelle, P.E. – Town Engineer, Town of Stoughton

From Natalie Pommersheim – Project Manager, Associate, Environmental Partners

CC Craig Horsfall, P.E. – Assistant Town Engineer, Town of Stoughton

Eric A. Kelley, P.E., CHMM, LEED GA - Principal, Environmental Partners

Subject Facility Inspection Report Update

This memorandum summarizes the inspections of Stoughton's newly-updated facilities, outlined in Task 6 of the General Services Agreement – Letter of Understanding Task Order No. 22 for FY19 Stormwater Services for the Engineering Department of the Town of Stoughton.

Under this task, Environmental Partners Group, LLC (EP) performed external inspections of the three Town-owned facilities that have been updated since the date of the previous Facility Inspection Report (Fall 2014). These three facilities are:

- Joseph H. Gibbons Elementary School
- Stoughton Public Library
- Stoughton High School

Overall, no issues of non-compliance of the NPDES Stormwater General Permit were observed during the inspections. The Municipal Facility Audit Photo Summary (see attached) briefly summaries any recommendations for Fiscal Year 2020.

Attachments:

Municipal Facility Audit Photo Summary

STOUGHTON, MA
MUNICIPAL FACILITY AUDIT PHOTO SUMMARY
SITE VISIT – AUGUST 2019

Facility Name: Joseph H. Gibbons Elementary School

Location: 235 Morton Street

Observation: N/A

Recommendation: Continue to inspect Gibbons School BMPs as part of routine BMP inspections.

STOUGHTON, MA
MUNICIPAL FACILITY AUDIT PHOTO SUMMARY
SITE VISIT – AUGUST 2019

Facility Name: Stoughton Public Library

Location: 84 Park Street

Observation: N/A

Recommendations: Facility has been fully renovated since the last inspection. Perform an updated audit of the interior of the facility for compliance of the NPDES Stormwater General Permit.

STOUGHTON, MA
MUNICIPAL FACILITY AUDIT PHOTO SUMMARY
SITE VISIT – AUGUST 2019

Facility Name: Stoughton High School

Location: 232 Pearl Street

Observation: N/A

Recommendation: Facility has been fully replaced since the last inspection. Perform an updated audit of the interior of the facility for compliance of the NPDES Stormwater General Permit.

APPENDIX O

BMP Observation Reports

ENVIRONMENTAL PARTNERS
— An Apex Company —

June 8, 2022

Mr. Marc J. Tisdelle
Town Engineer
Town Hall
10 Pearl Street
Stoughton, MA 02072

RE: NPDES Phase II Stormwater Assistance
Pollution Prevention & Good Housekeeping for Municipal Operations
Year 4 Stormwater BMP Inventory & Observations

Dear Mr. Tisdelle,

On April 13, 2016, the Environmental Protection Agency (EPA) released the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, which became effective July 1, 2018. The Permit imposes a host of new requirements for the Town of Stoughton and all communities under its jurisdiction.

In order to address the Permit requirements (Section 2.3.7.a.iii.6) for the stormwater treatment structure inspections, Environmental Partners Group, LLC (EP) completed observations of 51 of the Town's stormwater treatment best management practices (BMPs) to improve the Town's BMP inventory and also provide condition data.

EP staff conducted site visits of all the Town's mapped BMPs over the course of 4 days on March 9th, 10th, 11th, and 14th. Additionally, on March 30th, April 11th, April 13th, and May 16th EP visited additional BMPs while in Town conducting other MS4 work.

Prior to conducting the BMP inventory, drainage site plans were reviewed for the Library, Senior Center, Fire Station, Fire Department Headquarters, Police Department, Gibbons Elementary School, High School, West Elementary School, and Hanson Elementary School. From those site plans, EP added a number of BMPs to the Town's inventory. Additionally, while conducting field site visits, staff combined BMP components into one BMP asset. For example, if a drainage channel flows to an infiltration basin, that drainage system would be considered one single stormwater BMP. After reviewing site plans and discussing with the Town, oil/water separators at the Department of Public Works facility and the Fire Station on Freeman Street were determined to be part of the sanitary sewer system, not the drain system; they were removed from the BMP inventory. The current inventory of stormwater BMPs in the Town of Stoughton includes **53 BMPs.** The BMP locations are shown in Figure 1 and summarized in Table 1.

During the site visit, structure condition and maintenance issues were noted. Completed BMP observation data forms with photographs are attached to this report as Attachment 1. A summary of all maintenance issues observed is included as Table 2. Overall, no BMPs were found to require significant structural repairs.

In general, we noted excess growth of vegetation, buildup of dead vegetation, and trash. Some pooling at inlets to BMPs were noted, indicating a build-up of sediment. Areas of riprap that require sediment removal or refreshing of the stone were also noted. We also observed some areas where re-grading is recommended. And lastly, some inlets or outlets were partially clogged with debris.

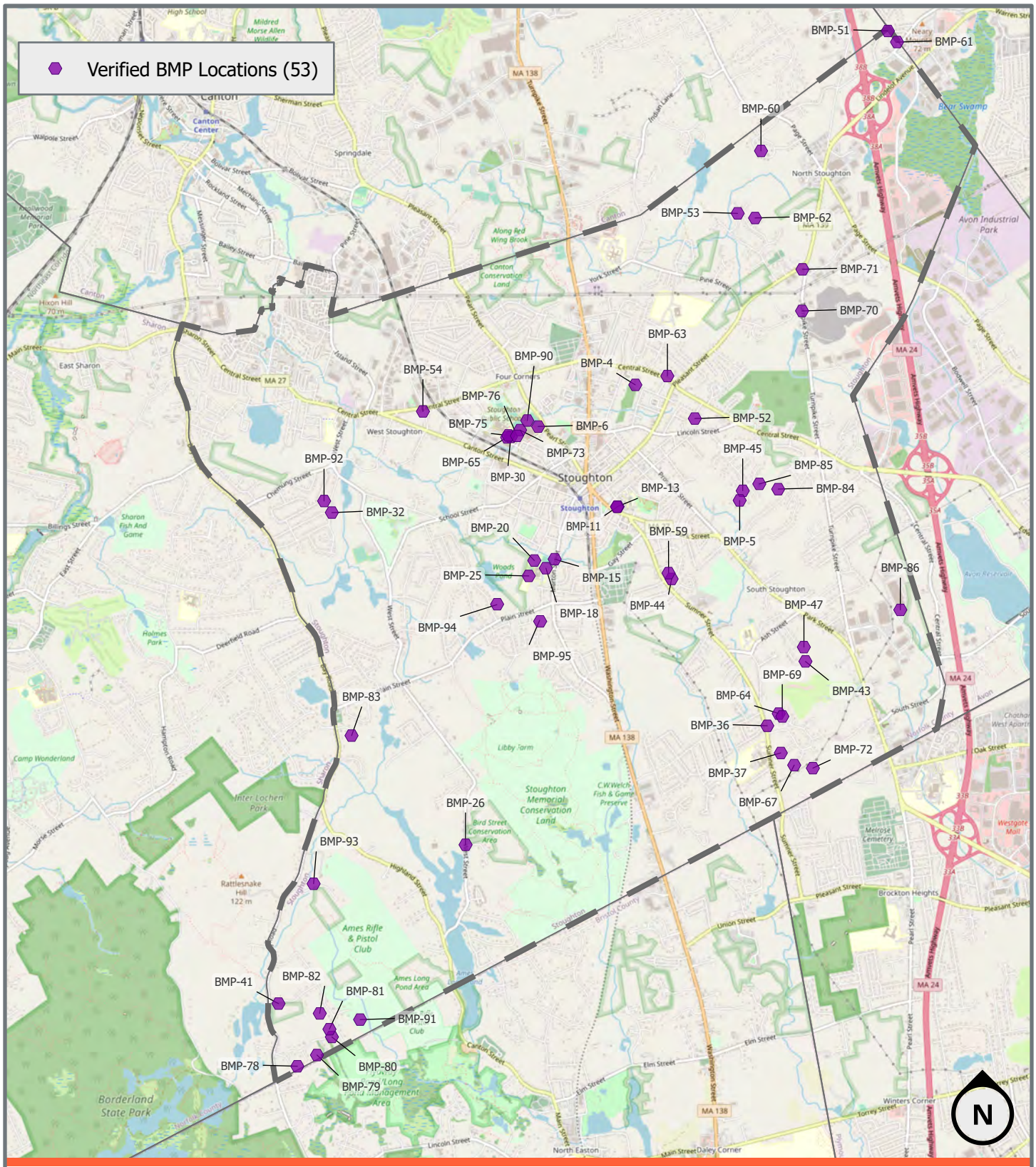
Aside from regular maintenance activities, EP found that one BMP appeared to be installed improperly. This BMP, BMP-43, is a proprietary separator built by Hydro International and is the First Defense model. It is located near 80 Bergeron Way. It appears that the side of the device that should receive untreated stormwater was placed at the outlet pipe, and the side of the device that discharges treated water was located at the inlet to the manhole.

We very much appreciate the opportunity to work with the Town of Stoughton on this project. Please don't hesitate to contact us if you have any questions or require additional information.

Sincerely,

Environmental Partners Group, LLC
Scott D. Turner, PE, AICP, LEED AP ND
Director of Planning
P: 617.657.0280
E: sdt@envpartners.com

Figures	Figure 1: Stormwater BMP Observation Locations
Tables	Table 1: Stormwater BMP Inventory and Maintenance Summary
Attachments	Attachment 1: Stormwater BMP Site Visit Data Forms
	Attachment 2: MS4 Certification



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 1: Stormwater BMP Observation Locations

Stoughton, MA

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-04	South side of Senior Center & Youth Commission	110 Rockland St	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	Significant amount of sediment and leaves on bottom of basin, which may have led to the standing water within the basin. No outlet or overflow or water treatment mechanism suggests the primary purpose of this basin is infiltration. Areas of stones within basin do not seem to be serving a function - maintenance needed
BMP-05	Within bend of Christie Murphy Dr	60 Christie Murphy Dr	Treatment - Extended Dry Detention Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Vegetation including vines and trees should be cut back. All riprap should be replaced. Trash should be removed. BMP appears to be functioning. Town should ensure the plants currently present were the ones designed to be there
			Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	Separator appears to be functioning. Moderate amount of trash visible, no oils. Metal device is visible at outlet pipe
BMP-06	High School	232 Pearl St	Infiltration - Subsurface Structure	1 - System operating as designed - No issues	Opened two manholes with weirs. BMP appears to be functioning. Manholes had no excess debris
BMP-11	Public Library's parking lot	84 Park St	Infiltration - Subsurface Structure	1 - System operating as designed - No issues	Unable to open clean out port - Town help is required to open inspection port and verify functioning of BMP. Manhole and catch basin within system were functioning
BMP-13	Public Library's parking lot	84 Park St	Infiltration - Subsurface Structure	2 - System operating as designed - Maintenance needed	Clean out port had a moderate amount of sediment. BMP appears to be functioning. Town to perform regular cleanings per manufacturer guidance. EP opened all nearby manholes to attempt to find a water quality unit. A weir was found in the manhole directly upstream of the infiltration system

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-15	Gibbons Elementary School	201 Morton St	Pretreatment - Sediment Forebay	2 - System operating as designed - Maintenance needed	This section of the BMP consists of a paved swale, catch basin, forebay, and level spreader. Accumulated debris is a big issue. Neither plants, sediment, leaves, or other debris should be present. Forebay needs to be cleaned out
			Treatment - Bioretention Area / Rain Garden	2 - System operating as designed - Maintenance needed	This BMP needs to be cleared of dead debris and excess vegetation. The debris makes a layer on the base of the basin. Riprap needs to be replaced. BMP is likely still functioning, but maintenance is needed to prevent the vegetation from fully taking over
BMP-18	Gibbons Elementary School	241 Morton St	Pretreatment - Sediment Forebay	2 - System operating as designed - Maintenance needed	Overall, BMP is very well maintained. The riprap is starting to be filled with leaves and sediment, but does not need to be replaced yet. The inlet needs to be cleaned of sediment, dirt, and leaves. This BMP also has a level spreader
			Treatment - Bioretention Area / Rain Garden	2 - System operating as designed - Maintenance needed	BMP is well maintained and functioning as designed
			Conveyance - Grassed Channel (Biofilter Swale)	1 - System operating as designed - No issues	Swale has check dam. Riprap is starting to be filled with leaves and sediment, but is still in very good shape
BMP-20	Gibbons Elementary School	235 Morton St	Pretreatment - Sediment Forebay	1 - System operating as designed - No issues	Overall, BMP is functioning. Water from paved swale is able to enter forebay. Riprap is clear. Dead vegetation around riprap may need to be cut back and removed. Minor amount of trash
			Treatment - Bioretention Area / Rain Garden	2 - System operating as designed - Maintenance needed	Unsure if existing plants are the plants intended, as designed. Dead brush should be removed. The BMP should be maintained before vegetation becomes excessive. Riprap around level spreader contains leaves and sediment that should be removed. Overall, BMP is functioning, but needs routine maintenance

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-25	Gibbons Elementary School	235 Morton St	Pretreatment - Proprietary Separator	2 - System operating as designed - Maintenance needed	Stormceptor. No excessive sediment or oils noted. Town to clean regularly as directed by proprietary separator instructions. Water is able to be conveyed through structure
			Infiltration - Subsurface Structure	1 - System operating as designed - No issues	Inspection clean outs port is located on dirt/pervious area - EP unable to locate. Subsurface structure is located below dirt. Bus drivers complained about lack of paved area to park on. Apparently this area gets muddy. Outfall was observed to be flowing - thus system conveys water
BMP-26	At the immediate entrance of Gibson Way off of West St	1546 West St	Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	Flowing water is audible. BMP appears to be functioning
BMP-30	High School	1600 Pennsylvania Ave	Infiltration - Subsurface Structure	1 - System operating as designed - No issues	BMP appears to be functioning properly. No sediment or oils observed
BMP-32	Located on the east side of Woodpecker Rd, where Woodpecker Rd meets Smith Ave	110 Woodpecker Rd	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Residents appear to be discarding yard debris here. Significant amount of leaves in basin. Also basin has algae. Unsure if current vegetation is the designed vegetation. Riprap areas either are full of debris or have had any debris washed/eroded away. Town should consider regrading floor of basin to encourage proper movement of water through basin
BMP-36	Located on the northeast corner of the intersection of Chase Run and Sumner St	14 Chase Run	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Residents appear to be dumping leaves in basin, fully covering one inlet. Trash needs to be removed. Full grown trees are in basin, indicating a lack of maintenance

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-37	Between 16 and 20	16 Dennison Court	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Water is able to be conveyed through channel successfully. Leaves, sediment, trash, brush, trees, etc. need to be cleared. Resident appears to be dumping grass clippings in channel
			Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Trees, vegetation, leaves, etc. should be removed. Water level is high during site visit. Water is brownish, suggesting a significant amount of organics. Outlet control structure overflow riprap area needs new riprap - now it's full of leaves, sediment, and debris
BMP-41	Located about 300' down Turnstone Terrace, on the right (south) side of the street	33 Turnstone Ter	Other - Dry Detention Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Full trees have grown in basin. All inlets and outlets need to be regraded as sediment has built up. There is a layer of sediment and leaves on the bottom of the basin. Basin currently has water in it. Riprap overflow area needs to be cleared of brush, leaves, and sediment or riprap replaced. Base of basin needs to be regraded
BMP-43	Behind 80 Bergeron Way	80 Bergeron Way	Conveyance - Water Quality Swale	2 - System operating as designed - Maintenance needed	Biological film and iron deposits noted. Swale should be regraded around inlet. The inlet should be cleared of debris. The swale should be cleared of dead debris. Riprap section toward end of swale may be check dam - the stones need to be cleared. Swale is functioning but may not be doing enough treatment
			Pretreatment - Proprietary Separator	2 - System operating as designed - Maintenance needed	A biological film and iron noted. The device has "inlet" written above the outlet pipe and "outlet" written about the inlet. Likely this BMP needs to be rotated 180 degrees. Device is a Hydro International First Defense unit.
BMP-44	South of Bancroft Rd	246 Sumner St	Other - Dry Detention Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Confirm BMP type. pile of leaves and debris in basin - likely dumped by residents. Riprap areas are hard to distinguish - they are so covered by sediment and leaves. Resident also appears to have cut back some trees within basin. Overall, basin needs to be cleared out

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-45	Corner of Christie Murphy Dr and James Massey Ln	74 Christie Murphy Dr	Other - Dry Detention Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Residents appear to be discarding dog waste bags (over 15 observed). Trees, vines, sediment, dead leaves, and other brush should be removed. Riprap should be cleared or replaced. Vines around inlet and outlet should be removed
			Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	BMP appears to be operating as designed.
BMP-47	Bergeron Way	60 Bergeron Way	Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	Hydro-int First Defense Unit. BMP is functioning. A minor amount of trash was observed. System should be regularly cleaned as specified by manufacture
			Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Riprap around inlet needs to be replaced - cattails are growing there. Trash and cart should be removed from basin. Talked to land owner and he's concerned with kids coming into the basin. He would like to see a fence built around the water for safety purposes. Riprap around overflow and overflow outlet need cleaning or replacement. BMP is functioning but needs routine maintenance
BMP-51	Right on town line	70 Drinkwater Ave	Other - Dry Detention Basin	2 - System operating as designed - Maintenance needed	Overall, BMP has naturalized. Full trees have grown and years of leaves and other organic debris has covered the floor of the basin. Dead vegetation needs to be removed. Standing water observed at outlet, inlet, and base of basin, which likely is not as designed. Stormwater is likely receiving minimal treatment and also is taking up organics/nutrients from the decaying debris
BMP-52	Southeast of 55 Vieve Ave	111 Richard Rd	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	Basin is generally in good condition. Base of basin is grass. Riprap overflow needs maintenance - riprap is covered with leaves and vegetation
			Pretreatment - Sediment Forebay	2 - System operating as designed - Maintenance needed	Riprap area needs to be replaced - currently, sediment, leaves, and live plants cover riprap. All plants should be removed

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-53	Between 39 Hana Dr and 52 Pondview Ln	52 Pondview Ln	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	BMP was fenced in during inspection. Significant amount of debris needs to be cleared. Inlets and outlet need maintenance as well. Full trees have grown in BMP. BMP is being naturalized. EP unable to locate overflow outlet (which would be outfall) to wetlands - town needs to locate/expose
BMP-54	Fire department HQ	1550 Central St	Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	BMP appears to be functioning properly. Maintain/empty as needed
			Infiltration - Subsurface Structure	1 - System operating as designed - No issues	Three gallery ports opened. BMP appears to be functioning properly. Maintain as specified by manufacture
			Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Site plans identify riprap overflow - if that does exist, the riprap has been buried under brush and dirt and needs to be maintained. Basin should be cleared of dead vegetation, leaves, trash, sediment, and excess live vegetation. The water level partly submerged the inlet, suggesting material has built up in the basin. The inlet to basin that discharges flow from subsurface infiltration system appears to rarely discharge water
BMP-59	North of Bancroft Rd	236 Sumner St	Treatment - Extended Dry Detention Basin	2 - System operating as designed - Maintenance needed	Resident maintains most of basin well. Need to confirm BMP type. Inlet and outlet need maintenance. riprap appears to be the original base of the basin, but that has since been mostly covered by grass and dirt. Full grown trees are in back of basin. need to determine original BMP intention. Minor amount of dead and live vegetation visible.
BMP-60	Between 33 and 21 Freely Dr	33 Freely Dr	Pretreatment - Oil/Grit Separator	1 - System operating as designed - No issues	BMP appears to be functioning as designed
			Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	BMP has two separate chambers, but both appear to have water and vegetation. Vegetation in BMP needs to be cut back and returned to original design. Trash should be removed. All areas with riprap need to be replaced.

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-61	Corner of Drinkwater Ave and Willow St	45 Drinkwater Ave	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Residents appear to be dumping leaves, grass clippings, and tree limbs here. This has led to significant dead vegetation. A layer of leaves appears to be covering the bottom of the basin. Likely minimal treatment is occurring. Water in basin is brown, suggesting significant organic material. Also water level is high - inlet/outlets may be clogged due to vegetation. Unable to investigate closely due to fence
BMP-63	Corner of main Rd and side St, behind fence	33 James Signett Way	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	Basin has ring of pine trees around a flat bottom basin with no outlet or overflow identified. Catch basin in BMP is leaching. There is a layer of sediment and organics at base of basin. Vegetation needs to be cleared. Riprap needs to be replaced. Inlet areas require maintenance, including removal of soil and debris.
BMP-64	Located in the woods behind 30 Chase Run	30 Chase Run	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Leaves and sediment have clogged riprap and base of channel. Also, riprap between adjacent basin and channel needs to be replaced. Water pooling at inlet of channel, evidence of scouring. Channel may need to be regraded.
BMP-65	High School	200 Cushing St	Pretreatment - Proprietary Separator	2 - System operating as designed - Maintenance needed	Trash should be removed (although trash may not be making it to final chamber)
			Infiltration - Subsurface Structure	1 - System operating as designed - No issues	No clean out port to inspect. No signed of any problems noted
BMP-67	Between/behind 13 & 9 Fords Run	13 Fords Run	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Channel needs to be cleared of vegetation, leaves, debris, trash, sediment, etc. replace riprap. Consider regrading. Stormwater is able to flow through channel
BMP-67	Between/behind 13 & 9 Fords Run	13 Fords Run	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Full grown trees are throughout BMP. The BMP overflow riprap area is covered with leaves, sediment, and sticks. Leaves and sediment cover the gas of the basin. BMP appears to have not been maintained recently

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-69	Located between #24, and #16 Penniman Cir, about 100ft back into the woods	16 Penniman Cir	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Inlet is generally clogged by sediment and leaves. Riprap needs replacing. Regrading needed, especially at inlet
			Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Base of basin is dead leaves. Trees, plants, trash, sediment need to be removed. Outlet control structure is partially covered by debris, but appears to be functioning. Standing water in basin - regrading and dirt removal is required if that was not intended
BMP-70	Top of old maple st	187–199 Old Maple St	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Stormwater can flow through swale, but significant maintenance is needed. Rip rap needs to be replaced due to sediment and vegetation growth. Trash and dead vegetation observed. Significant amount of dirt and sediment in swale. Swale needs to be regraded to improve stormwater flow
BMP-71	In the fenced in area to the east of a small parking lot off of Pleasant St	988–1098 Pleasant St	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Leaves, vegetation, sediment, trash, and cattails need to be cleared. Inlets and outlet control structure need maintenance
BMP-72	In the woods about 450 feet southeast from Fords Run	21 Fords Run	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Significant amount of vegetation. Riprap is full of leaves, likely sediment too. Base of basin is leaves. Overflow riprap is full of sediment, leaves, and sticks. Major maintenance needed. Water observed successfully entering and exiting BMP. outlet control structure unable to be properly inspected due to overgrowth around structure
BMP-73	Northwest corner of High School	232 Pearl St	Infiltration - Subsurface Structure	1 - System operating as designed - No issues	BMP appears to be functioning as designed. Manhole before subsurface unit has weir
BMP-75	High School	205 Cushing St	Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	Hydro-Int Downstream Defender. BMP appears to be functioning properly

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-76	High School	1600 Pennsylvania Ave	Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	Separator appears to be functioning as designed
BMP-78	Between 66 and 73 Cleary Dr	66 Cleary Dr	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Water level is high - inlet was half submerged. If this water level is normal the grading around the inlet may need to be changed. Unsure how much treatment is accomplished in basin - it appears to be just a pond. Excess vegetation, brush, and leaves should be removed. Overflow riprap area needs a lot of maintenance - riprap should be replaced
BMP-79	BMP wraps around houses on Cleary Dr and Lanes End	81 Patrick's Run	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Channel appears to be functioning. Sediment and leaves in riprap should be removed or riprap replaced. Trees and brush should be cut back. Areas of pooling suggest parts of the channel should be regraded
			Other - Dry Detention Basin	2 - System operating as designed - Maintenance needed	BMP has berm around edge and two riprap channels guiding water through basin. Full trees have grown. Pooling in front of outlet control structure and in front of overflow outfall. Riprap has leaves and debris which should be removed. Leaves and debris in weir of outlet control structure should be removed
			Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Channel appears to be functioning. Areas of pooling suggests BMP should be regraded. Riprap is full of leaves and sediment, suggesting it should be replaced. Trash should be removed. Sediment in inlet should be removed. Full trees have grown up in channel, which should be removed
BMP-80	Behind 154 Eagle Rock Rd	154 Eagle Rock Rd	Treatment - Dry Detention Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Inlets need to be cleared of excess vegetation and possibly regraded. Base of BMP has a layer of sediment and leaves. There is areas of pooling throughout basin - unsure if that's intended. Full trees have grown in basin as well as many plants. Leaves and vegetation near outlet control structure should be removed. Residents are disposing of yard debris very close to BMP. All riprap areas need maintenance

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-81	Between and behind 150 and 146 Eagle Rock Rd	150 Eagle Rock Rd	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Unclear if channel should have a vegetated or riprap base. Sediment within inlet should be removed and vegetation around inlet should be cut back. Pooling noted in sections, one with cattails. Trash, sediment, leaves, and other excess vegetation should be addressed
			Treatment - Dry Detention Basin	2 - System operating as designed - Maintenance needed	Basin is slightly swampy. BMP is becoming naturalized. Vegetation around outlet control structure should be removed. Layer of sediment at base of basin. Leaves, trees, excess plants should be removed
BMP-82	Between/behind 110 and 120 Eagle Rock Rd	128 Eagle Rock Rd	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Unclear if channel should have a vegetated or riprap base. Sediment within inlet should be removed and vegetation around inlet should be cut back. Pooling noted in sections, one with cattails. Trash, sediment, leaves, and other excess vegetation should be addressed
			Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	A riprap path cuts through basin from channel to outlet. This riprap has sediment and leaves in it and needs to be maintained. Riprap overflow area also is full and needs maintenance. Trees from basin should be removed if not intended to be there, especially tree right before outlet control structure.
BMP-83	Between 66 and 38 Kevin Clancy Way	66 Kevin Clancy Way	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	Two chambers to this BMP. Vegetation (including vines) has grown around inlet and outlets and generally throughout basin. Outfall overflow is almost entirely covered by leaves. BMP requires clearing of excess vegetation and some sediment. All areas of riprap need maintenance and potentially to be replaced.
BMP-84	Access from William Kelley Rd cup-de-sac	246 Curtis Ave	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Somebody has cut down some trees, but more trees should be removed. Standing water was observed in half the basin. All riprap areas should be replaced. Stormwater appears to take unusual path through basin - basin may need to be regraded. Leaves, other dead vegetation, and sediment should be removed from basin
BMP-85	Large basin behind 3 houses	57 Tamarack Dr	Treatment - Wet Basin	2 - System operating as designed - Maintenance needed	Overall, BMP has been naturalized. It appears to have not been maintained in years. Rip rap needs replacing, trash, sediment, leaves, yard debris, full grown trees/plants need to be addressed. Inlets need maintenance.

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-86	Edge of Shuman, side of warehouse	139 Shuman Ave	Treatment - Extended Detention Basin	2 - System operating as designed - Maintenance needed	Unclear BMP purpose/intended functioning. There appears to be two channels/swales that collect and move flow through basin. Catch basin adjacent to basin is covered with vegetation. All rip rap needs maintenance. Minor amount of trash throughout. Full trees have grown within basin. Part of basin appears to have been mowed or maintained
BMP-90	High School	232 Pearl St	Pretreatment - Proprietary Separator	1 - System operating as designed - No issues	Hydro-Int Downstream Defender unit. BMP appears to be functioning properly
BMP-91	Side of and behind 33 Fosters Run	33 Fosters Run	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Channel has some areas of pooling - regrading may be needed. Leaves should be removed from inlet. Base of channel has leaves, sediment, some trash, some pooling, and trees - maintenance required
			Treatment - Extended Detention Basin	2 - System operating as designed - Maintenance needed	Excess vegetation, including spruce trees should be cleared from the basin if not intended to be there. Riprap overflow area is covered with leaves and brush - maintenance needed. Basin appears to be generally functioning. Outlet control structure has some pooling in front and some debris stuck in weir. Currently BMP is slightly marshy
BMP-92	Between Powell St and Woodpecker Rd	87 Woodpecker Rd	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Full trees have grown. Vines are an issues and growing on all vegetation. Leaves and other dead vegetation need to be removed. A significant amount of sediment and stones seem to have washed in. Riprap area in front of inlet needs maintenance - stones are full of sediment and likely eroded from original location. Pooling is likely at inlet. Trash needs to be removed. Residents may be dumping yard debris here as well
BMP-93	End of Jordan Dr	52 Jordan Dr	Conveyance - Drainage Channel	2 - System operating as designed - Maintenance needed	Structure looks like it was originally designed to be a conveyance BMP, but excess vegetation, leaf litter accumulation, and lack of up keep has led to major ponding. Inlet and outlet pipes are partially covered. Lower outlet pipe from outlet control structure is completely inundated/buried. Rip rap needs to be refreshed. trees growing in structure need to be removed

Table 1: Stormwater BMP Inventory and Maintenance Summary

BMP ID	Location	Address	Type	Asset Condition	Condition Notes
BMP-94	Behind 11 Hunt Drive	11 Hunt Drive	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	BMP is becoming naturalized. Numerous trees have grown up. Unclear what base of basin should be - it's currently vegetation. Inlet riprap needs to be replaced. Trash throughout basin, including dog water bags. Regrading of basin may be needed.
BMP-95	Corner of Whitney and Whitten	80 Whitten Ave	Infiltration - Infiltration Basin	2 - System operating as designed - Maintenance needed	Basin needs routine maintenance. Tree growth and excess plants - most vegetation likely is not impeding function of BMP, except bush near inlet and outlet. That area appears to have originally been riprap. Town should clean out sediment, soil, and leaves from riprap. Sides of basin have some signs of erosion and town should consider reseeding or other stabilizing methods. Town to follow BMP mowing schedule.

2022-03-11, BMP-63

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-11 15:53:12 UTC by EPField 01
Location	42.13390293722277, -71.092597481367
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	10:38
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-63
Address	33 James Signett Way Stoughton, MA 02072
Location	Corner of main road and side street, behind fence
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees have grown up in basin

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, dead plants, and other debris visible

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Throughout basin, especially around outlets and riprap

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Inlets need to be cleared of vegetation

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Pooling at inlets - regrading should be considered

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Basin has ring of pine trees around a flat bottom basin with 2 inlets and 1 outlet control structure. Catch basin in BMP is leaching. There is a layer of sediment and organics at base of basin. Vegetation needs to be cleared. Riprap needs to be replaced. Inlet/outlet areas require maintenance, including removal of soil and debris.

Asset Photos

Leaching beehive grate catch basin in front of outlet control structure that has trash grate

General Inspection Information

Inspection Summary	BMP requires routine maintenance, including clearing of sediment, trash, and vegetation.

General Inspection Photos

2022-03-11, BMP-45

Created	2022-03-08 22:51:03 UTC by EPField 01
Updated	2022-03-30 18:39:56 UTC by EPField 01
Location	42.123901131147456, -71.08386395964878
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	13:17
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-45
Address	74 Christie Murphy Dr Stoughton, MA 02072
Location	Corner of Christie Murphy Dr and James Massey Ln
Type of Inspection	Regular

BMP Inspection

Other - Dry Detention Basin

Asset Type	Other - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Vines, trees, plants

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and other brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash. 15+ dog poop bags noted

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vines and excess vegetation should be removed from around the outlet/inlet pipes

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Residents appear to be discarding dog poop bags (over 15 observed). Trees, vines, sediment, dead leaves, and other brush should be removed. Riprap should be cleared or replaced. Vines around inlet and outlet should be removed.

Asset Photos

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Some trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	BMP appears to be operating as designed. Unsure separator type

Asset Photos

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Residents are discarding dog poop bags here. Excess vegetation, trash, vines, leaves and sediment should be removed.
General Inspection Photos	

2022-03-09, BMP-6

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-10 20:43:16 UTC by EPField 01
Location	42.129563952886855, -71.10769961774264
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	15:34
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-6
Address	232 Pearl Street Stoughton, Massachusetts 02072
Location	High School
Type of Inspection	Regular

BMP Inspection

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Opened 2 manholes with weirs. Appears to be functioning. Maholes had no excess debris
Asset Photos	

General Inspection Information

Inspection Summary	BMP appears to be overating as designed

General Inspection Photos

2022-03-09, BMP-51

Created	2022-03-08 22:51:03 UTC by EPField 01
Updated	2022-03-09 14:58:02 UTC by EPField 01
Location	42.16378458224065, -71.06665819388178
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	09:10
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-51
Address	70 Drinkwater Ave Stoughton, MA 02072
Location	Right on town line
Type of Inspection	Regular

BMP Inspection

Other - Dry Detention Basin

Asset Type	Other - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines observed on trees

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full trees have grown up

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of dead leaves and brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Partially covered by debris

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Standing water noted at outlet, inlet, and base of basin

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Overall, BMP has naturalized. Full trees have grown and years of leaves and other organic debris has covered the floor of the basin. Dead vegetation needs to be removed. Standing water observed at outlet, inlet, and base of basin, which likely is not as designed.

Asset Photos

General Inspection Information

Inspection Summary	BMP has naturalized. Significant maintenance and clearing required. Also, interconnection and outfall need to be mapped.
General Inspection Photos	

2022-03-10, BMP-30

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-10 21:19:53 UTC by EPField 01
Location	42.12868171753522, -71.11089405514073
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	15:35
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-30
Address	1600 Pennsylvania Avenue Stoughton, Massachusetts 02072
Location	High School
Type of Inspection	Regular

BMP Inspection

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	N/A

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	No

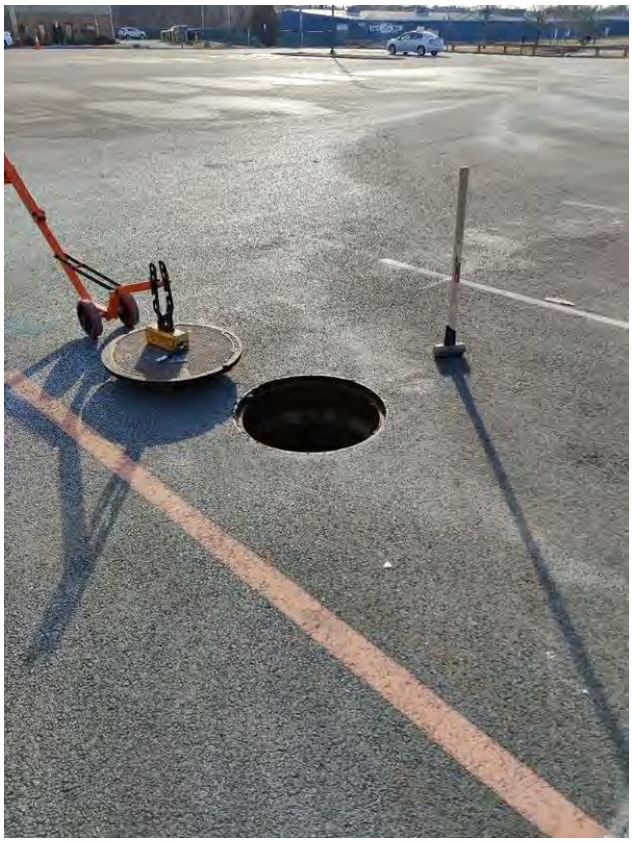
Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	BMP appears to be functioning properly. No sediment or oils observed
Asset Photos	

General Inspection Information

Inspection Summary	BMP appears to be functioning properly
General Inspection Photos	

2022-03-09, BMP-86

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-09 17:14:07 UTC by EPField 01
Location	42.11348639720348, -71.06554804425943
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	12:01
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-86
Address	139 Shuman Ave Stoughton, MA 02072
Location	Edge of Shuman, side of warehouse
Type of Inspection	Regular

BMP Inspection

Treatment - Extended Detention Basin

Asset Type	Treatment - Extended Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Some vines

Soil Erosion

Deficiency Observed	Yes
Deficiency Notes	2 channels have been eroded and created. Unsure if that's intended

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees, plants

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Dead plants, leaves, brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes

Deficiency Notes	Minor amount of trash throughout

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Sediment thoughtful basin, especially on riprap and at inlets and outlet

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Inlet/outlet overgrown. Sediment needs to be removed

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Scouring/erosion at inlets

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Unsure BMP purpose/intended functioning. There appears to be 2 channels/swales that collect and move flow through basin. Catch basin adjacent to basin is covered with vegetation. All rip rap needs maintenance. Minor amount of trash throughout. Full trees have grown within basin. Part of basin appears to have been mowed or maintained.

Asset Photos

General Inspection Information

Inspection Summary	Excess vegetation, sediment, debris, erosion, and trash.
General Inspection Photos	

2022-03-14, BMP-83

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-14 18:40:39 UTC by EPField 01
Location	42.10278945658422, -71.12963473342778
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	14:22
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-83
Address	66 Kevin Clancy Way Stoughton, MA 02072
Location	Between 66 and 38 Kevin Clancy Way
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Brush

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, brush, etc.

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vegetation has grown around inlet and outlets. Outfall overflow is almost entirely covered by leaves

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP includes a sediment forebay for pre-treatment. Vegetation (including vines) has grown around inlet and outlets and generally throughout basin. Outfall overflow is almost entirely covered by leaves. BMP requires clearing of excess vegetation and some sediment. All areas of riprap need maintenance and potentially to be replaced.

Asset Photos

This is the berm between the sediment forebay and the rest of the basin

Outlet control structure is raised off the bottom which means it is designed to infiltrate

General Inspection Information

Inspection Summary	BMP appears to be functioning, but requires routine maintenance.
General Inspection Photos	

2022-03-11, BMP-60

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-11 15:02:48 UTC by EPField 01
Location	42.153294897026846, -71.0821695998311
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	09:19
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-60
Address	33 Freely Drive Stoughton, Massachusetts 02072
Location	Between 33 and 21 Freely Drive
Type of Inspection	Regular

BMP Inspection

Pretreatment - Oil/Grit Separator

Asset Type	Pretreatment - Oil/Grit Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	BMP appears to be functioning as designed

Asset Photos

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Phragmites - check planting plan to determine if they are intended

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Plants growing up around riprap,

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and bursh

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Some trash observed

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Basin has later of sediment and leaves on bottom

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Inlet to and outlet from bmp likely needs to be regraded. Significant pooling and scouring

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed

Asset Inspection Notes	Both chambers appear to have water and vegetation. Unsure of original BMP design intentions because of excess vegetation. BMP needs to be maintainedand returned to original design. Trash should be removed. all areas with riprap need to be replaced.

Asset Photos

General Inspection Information

Inspection Summary	BMP needs significant maintenance. Unsure BMP type due to excess vegetation.
General Inspection Photos	

2022-03-10, BMP-73

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-10 21:03:24 UTC by EPField 01
Location	42.12926496547353, -71.10981313731544
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	15:34
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-73
Address	232 Pearl Street Stoughton, Massachusetts 02072
Location	Northwest corner of Stoughton High School
Type of Inspection	Regular

BMP Inspection

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

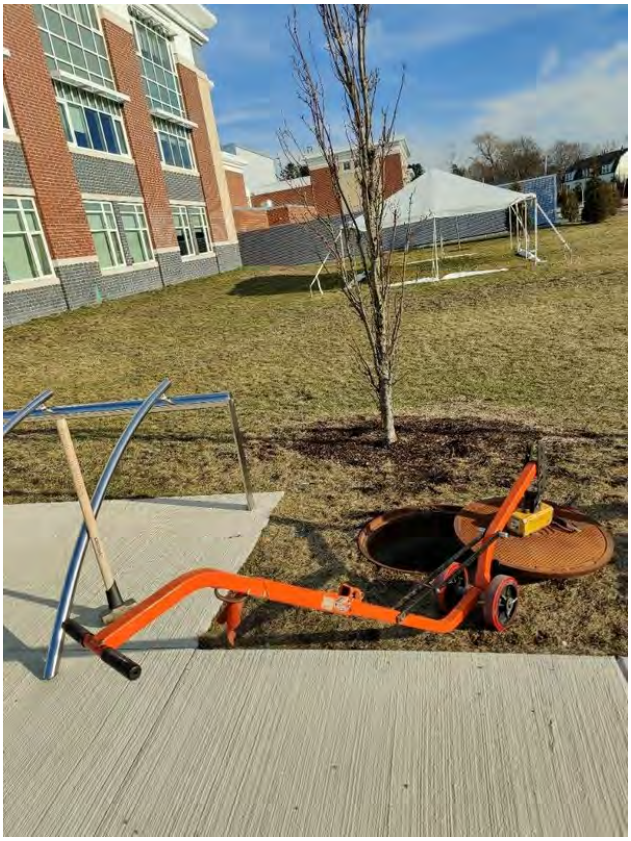
Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	BMP appears to be functioning as designed. Manhole before Subsurface unit has weir
Asset Photos	

General Inspection Information

Inspection Summary	BMP appears to be functioning properly

General Inspection Photos



2022-03-14, BMP-79

Created	2022-03-08 22:51:07 UTC by EPField 01
Updated	2022-03-14 16:04:24 UTC by EPField 01
Location	42.07504948571548, -71.13382576040621
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	11:24
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-79
Address	81 Patricks Run Stoughton, MA 02072
Location	BMP wraps around houses on Cleary Dr and Lanes End
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Brush, trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	In riprap

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Minor amount of sediment in inlet

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Channel had some pooling

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Channel appears to be functioning. Sediment and leaves in riprap should be removed or riprap replaced. Trees and brush should be cut back. Areas of pooling suggest parts of the channel should be regraded. Inlet to channel needs to be cleared of any sediment buildup to prevent pooling

Asset Photos

inlet to channel from street drainage. Sediment buildup suggests that pooling occurs here

Other - Dry Detention Basin

Asset Type	Other - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Brush, trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and other debris

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	In riprap

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Debris in outlet control structure should be removed

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Some areas of pooling

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP has berm around edge and 2 riprap channels guiding water through basin. Unsure BMP type since BMP has become naturalized. Full trees have grown. Pooling in front of outlet control structure and in front of overflow outfall. Riprap has leaves and debris which should be removed. Leaves and debris in weir of outlet control structure should be removed.

Asset Photos

Outlet control structure is partially blocked, leading to pooling

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full trees in channel

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes

Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	In riprap

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Some sediment in inlet

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Pooling in some parts of channel

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Channel appears to be functioning. Areas of pooling suggests BMP should be maintained. Riprap is full of leaves and sediment, suggesting it should be replaced. Trash should be removed. Sediment in inlet should be removed. Full trees have grown up in channel, which should be removed

Asset Photos

Brush and vines in channel

General Inspection Information

Inspection Summary	BMP conveys water but requires maintenance

General Inspection Photos

2022-03-14, BMP-78

Created	2022-03-08 22:51:07 UTC by EPField 01
Updated	2022-03-14 15:19:26 UTC by EPField 01
Location	42.07408034652741, -71.13612109381137
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	11:07
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-78
Address	66 Cleary Dr Stoughton, MA 02072
Location	Between 66 and 73 Cleary Dr
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees grew up in basin. Inlet is covered by vegetation

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Water level is high - inlet was half submerged. If this water level is normal the grading around the inlet may need to be changed. Unsure how much treatment is accomplished in basin - it appears to be just a pond. Excess vegetation, brush, and leaves should be removed. Overflow riprap area needs a lot of maintenance - riprap should be replaced.

Asset Photos

Overflow riprap area

General Inspection Information

Inspection Summary	BMP needs routine maintenance

General Inspection Photos

2022-03-14, BMP-41

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-14 17:39:17 UTC by EPField 01
Location	42.07953448662072, -71.1382833642912
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	13:31
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-41
Address	33 Turnstone Terrace Stoughton, Massachusetts 02072
Location	Located about 300 feet down Turnstone Terrace, on the right (south) side of the road
Type of Inspection	Regular

BMP Inspection

Other - Dry Detention Basin

Asset Type	Other - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full trees visible

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Layer on basin bottom

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Need to clear vegetation and sediment

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	BMP currently has water in it

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Full trees have grown in basin. All inlets and outlets need to be regraded as sediment has built up. There is a layer of sediment and leaves on the bottom of the basin. Basin currently has water in it. Riprap overflow area needs to be cleared of brush, leaves, and sediment or riprap replaced. Base of basin needs to be regraded
Asset Photos	

General Inspection Information

Inspection Summary	BMP is becoming naturalized, but is generally functioning.

General Inspection Photos

2022-03-10, BMP-11

Created	2022-03-08 22:51:02 UTC by EPField 01
Updated	2022-03-10 17:04:27 UTC by EPField 01
Location	42.12281440001534, -71.0984143987298
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	11:54
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-11
Address	84 Park St Stoughton, MA 02072
Location	Stoughton Public Library
Type of Inspection	Regular

BMP Inspection

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	N/A

Trash/Debris

Deficiency Observed	N/A

Oil/Grease

Deficiency Observed	N/A

Excess Sedimentation

Deficiency Observed	N/A

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	N/A

Other Issues

Deficiency Observed	N/A

Asset Inspection Summary

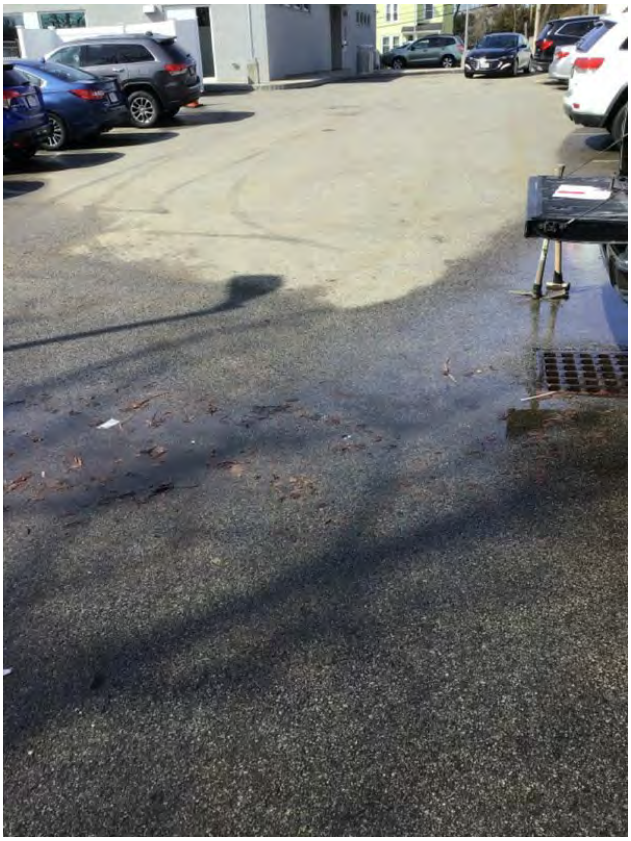
Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Unable to open clean out port - Town to help. Therefore unable to fully inspect. Manhole and catch basin within system were functioning well.

Asset Photos

General Inspection Information

Inspection Summary	Clean out port stuck. Therefore unable to fully inspect

General Inspection Photos



2022-03-10, BMP-43

Created	2022-03-08 22:51:02 UTC by EPField 01
Updated	2022-03-11 14:18:12 UTC by EPField 01
Location	42.10905216175822, -71.07664478992356
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	14:55
Weather	Clear, Cool
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-43
Address	80 Bergeron Way Stoughton, Massachusetts 02072
Location	Behind 80 Bergeron Way
Type of Inspection	Regular

BMP Inspection

Conveyance - Water Quality Swale

Asset Type	Conveyance - Water Quality Swale

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Cattails

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Leaves and sediment have built up on flared end section of outlet pipe

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Pooling at outlet

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Biological film and iron deposits noted. Swale should be regraded around inlet. The inlet should be cleared of debris. The swale should be cleared of dead debris and cattails. Riprap section toward end of swale may be check dam - the stones need to be cleared. Swale appears to be functioning.

Asset Photos

Film did not re-coalesce after being disturbed with a stick, indicating film is biological in origin, not from petroleum

riprap - maybe check dam?

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	A film and iron noted. The device has "inlet" written above the outlet pipe and "outlet" written about the inlet. Likely this BMP needs to be rotated 180degree.

Asset Photos

DRAIN

General Inspection Information

Inspection Summary	BMP is functional but requires routine maintenance. BMP proprietary separator insert may need to be rotated 180degees.

General Inspection Photos

2022-03-14, BMP-80

Created	2022-03-08 22:51:07 UTC by EPField 01
Updated	2022-03-14 16:29:13 UTC by EPField 01
Location	42.07661354625034, -71.13207727470333
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	12:12
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-80
Address	154 Eagle Rock Rd Stoughton, MA 02072
Location	Behind 154 Eagle Rock Rd
Type of Inspection	Regular

BMP Inspection

Treatment - Extended Detention Basin

Asset Type	Treatment - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Throughout basin

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Throughout basin

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Throughout basin

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vegetation needs to be removed from inlets/outlet

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Pooling noted in a few areas - unsure if that’s intended

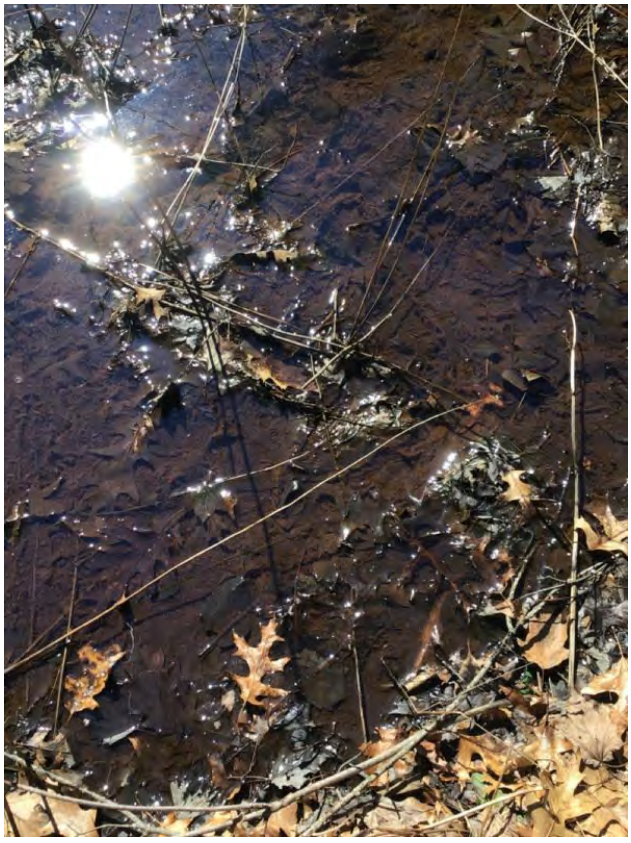
Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Site plans required to confirm BMP type. Inlets need to be cleared of excess vegetation and possibly regraded. Base of BMP has a layer of sediment and leaves. There is areas of pooling throughout basin - unsure if that’s intended. Full trees have grown in basin as well as many plants. Leaves and vegetation near outlet control structure should be removed. Residents are disposing of yard debris very close to BMP. Most areas of riprap need maintenance.

Asset Photos



General Inspection Information

Inspection Summary	BMP is becoming naturalized.
General Inspection Photos	

2022-03-09, BMP-64

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 18:04:05 UTC by EPField 01
Location	42.10452908019216, -71.07978899650655
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	12:57
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-64
Address	30 Chase Run Stoughton, MA 02072
Location	Located in the woods behind #30 Chase Run.
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees within channel

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, plants

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Tree branches in channel

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap is full

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Inlet partially covered by vegetation debris

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Standing water at inlet

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Leaves and sediment have clogged riprap and for base of channel. Also, riprap between adjacent basin and channel needs to be replaced. Water pooling at inlet of channel, evidence of scouring. Channel may need to be regraded.
Asset Photos	

General Inspection Information

Inspection Summary	BMP needs maintenance, especially regrading riprap, grading, leaves, and sediment.
General Inspection Photos	

2022-03-09, BMP-59

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-09 20:07:48 UTC by EPField 01
Location	42.11677832498725, -71.09256878931156
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	14:58
Weather	Cool, Overcast, Rain
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-59
Address	236 Sumner Street Stoughton, Massachusetts 02072
Location	North of Bancroft Rd
Type of Inspection	During Storm Event

BMP Inspection

Treatment - Extended Dry Detention Basin

Asset Type	Treatment - Extended Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees

Dead Vegetation

Deficiency Observed	No

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap base of basin is covered

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Lower outlet is mostly covered by leaves

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Resident maintains most of basin well. Need to confirm BMP type. Inlet and outlet need maintenance. riprap appears to be the original base of the basin, but that has since been mostly covered by grass and dirt. Full grown trees are in back of basin. need to determine original BMP intention. Minor amount of dead and live vegetation visible.
Asset Photos	

General Inspection Information

Inspection Summary	Need to understand original BMP design. BMP is maintained/altered by resident.

General Inspection Photos

2022-03-09, BMP-85

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-09 16:48:32 UTC by EPField 01
Location	42.12449508790656, -71.08192402020084
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	11:32
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-85
Address	57 Tamarack Dr Stoughton, MA 02072
Location	Large basin behind 3 houses
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Cattails

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of excess vegetation, including numerous full size trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of dead vegetation. Residents appear to be dumping yard debris

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Trash throughout basin

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Sedimentation on riprap and base of basin

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	All 3 inlets need clearing in order to be functional

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Standing water at 2 inlets, scouring evident

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Overall, BMP has been naturalized. It appears to have not been maintained in years. Rip rap needs replacing, trash, sediment, leaves, yard debris, full grown trees/plants need to be addressed. Inlets need maintenance.

Asset Photos

General Inspection Information

Inspection Summary	BMP has been naturalized. Significant maintenance is needed to return BMP to proper functioning.

General Inspection Photos

2022-03-09, BMP-44

Created	2022-03-08 22:51:03 UTC by EPField 01
Updated	2022-03-09 19:53:49 UTC by EPField 01
Location	42.116272560092575, -71.09221364989675
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	14:42
Weather	Cool, Overcast, Rain
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-44
Address	246 Sumner Street Stoughton, Massachusetts 02072
Location	South of Bancroft road
Type of Inspection	During Storm Event

BMP Inspection

Other - Dry Detention Basin

Asset Type	Other - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees and plants are growing in basin

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, tree limbs in BMP

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap covered. Sediment on bottom of basin as well

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Confirm BMP type. pile of leaves and debris in basin - likely dumped by residents. Riprap areas are hard to distinguish - they are covered by sediment and leaves. Resident also appears to have cut back some trees within basin. Overall, basin needs to be cleared out.
Asset Photos	

riprap covered

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Confirm BMP type. Residents are dumping leaves/debris and cutting down trees in basin

General Inspection Photos

2022-03-09, BMP-52

Created	2022-03-08 22:51:03 UTC by EPField 01
Updated	2022-03-09 20:27:52 UTC by EPField 01
Location	42.1301970890381, -71.08941629053693
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	15:18
Weather	Cool, Overcast, Rain
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-52
Address	111 Richard Road Stoughton, Massachusetts 02072
Location	SE of 55 Vieve Ave
Type of Inspection	During Storm Event

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	No

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Outlet overflow riprap is covered with leaves and sediment

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Basin is generally in good condition. Base of basin is grass. Riprap overflow are needs maintenance - riprap is covered with leaves and vegetation.
Asset Photos	

riprap overflow is covered with leaves

Pretreatment - Sediment Forebay

Asset Type	Pretreatment - Sediment Forebay

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant vegetation

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Dead vegetation

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap is covered with sediment and leaves

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Riprap area needs to be replaced - currently, sediment, leaves, and live plants cover riprap. All plants should be removed.

Asset Photos

General Inspection Information

Inspection Summary	BMP is generally well maintained except for inlet and outlet areas. There, riprap needs to be replaced.
General Inspection Photos	

2022-03-14, BMP-81

Created	2022-03-08 22:51:07 UTC by EPField 01
Updated	2022-03-14 16:49:05 UTC by EPField 01
Location	42.0772876528418, -71.13235908965541
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	12:32
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-81
Address	150 Eagle Rock Rd Stoughton, MA 02072
Location	Between and behind 150 and 146 Eagle Rock Rd
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No
Deficiency Notes	N/A

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Plants, vines, etc.

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, debris

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	On base of channel

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vegetation around inlet and inlet partly full of sediment

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Some pooling

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Unsure if channel should have a vegetated or riprap base. Sediment within inlet should be removed and vegetation around inlet should be cut back. Pooling noted in sections, one with trash, sediment, leaves, and other excess vegetation should be addressed.

Asset Photos

Treatment - Wet Basin

Asset Type	Treatment - Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees, plants

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Throughout

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Throughout

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vegetation should be cut back

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	BMP is swampy

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Basin is wet BMP is becoming naturalized. Vegetation around outlet control structure should be removed. Layer of sediment at base of basin. Leaves, trees, excess plants should be removed. Outlet control structure appears to be clogged and needs maintenance.
Asset Photos	

Riprap overflow area

Overflow outfall

Outlet control structure appears to be clogged

General Inspection Information

Inspection Summary	BMP is becoming naturalized.
General Inspection Photos	

2022-03-09, BMP-72

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-09 18:57:20 UTC by EPField 01
Location	42.0997715729446, -71.07584305262937
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	13:48
Weather	Cool, Overcast, Snow
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-72
Address	Stoughton, MA 02072
Location	In the woods about 450 feet southeast from Fords Run.
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No
Deficiency Notes	N/A

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full grown trees visible

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves cover base of basin. Also dead brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vegetation overgrown around control structure

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Riprap needs replacing. Vegetation overgrown

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Need site plans to verify BMP typeSignificant amount of vegetation. Riprap is full of leaves and sediment. Base of basin is leaves. Overflow riprap is full of sediment, leaves, and sticks. Major maintenance needed. Water observed successfully entering and exiting BMP. Outlet control structure unable to be properly inspected due to overgrowth around structure. Pooling suggests that the outlet control structure is clogged and needs maintenance.

Asset Photos

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Significant maintenance needed. Confirm BMP type.

General Inspection Photos

2022-03-09, BMP-71

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 14:57:13 UTC by EPField 01
Location	42.14311169518327, -71.07676739835286
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	09:43
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-71
Address	988–1098 Pleasant St Stoughton, MA 02072
Location	In the fenced in area to the east of a small parking lot off of Pleasant St.
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No
Deficiency Notes	N/A

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Vegetation overgrown

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves covering bottom of basin

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount observed

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Sediment is an issue throughout basin

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Outlets and inlets are partially covered by debris

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Outlets need inlets are partially covered by debris

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	Yes
Deficiency Notes	1 outlet was cracked

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Clogging at inlets & outlets. 1 especially needs regrading

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Leaves, excess vegetation, sediment, and trash need to be cleared. Inlets and outlet control structure need maintenance.

Asset Photos

Inlet

Excess vegetation

Inlet

General Inspection Information

Inspection Summary	Clogging, excess vegetation, sedimentation, and inlet maintenance are all major issues.
General Inspection Photos	

2022-03-10, BMP-20

Created	2022-03-08 22:51:01 UTC by EPField 01
Updated	2022-03-10 19:09:34 UTC by EPField 01
Location	42.11779539672362, -71.10878214240074
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	15:33
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-20
Address	235 Morton St Stoughton, MA 02072
Location	Gibbons Elementary School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Sediment Forebay

Asset Type	Pretreatment - Sediment Forebay

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	No

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Overall, BMP is functioning well. Water from paved swale is able to enter forebay. Riprap is clear. Dead vegetation around riprap may need to be cut back and removed. Minor minor of trash
Asset Photos	

Treatment - Bioretention Area / Rain Garden

Asset Type	Treatment - Bioretention Area / Rain Garden

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Vegetation should be cleared out

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Unsure if existing plants are the plants intended, as designed. Dead brush should be removed. The BMP should be maintained before vegetation becomes excessive. Riprap around level spreader contains leaves and sediment that should be removed. Overall, BMP is functioning, but needs routine maintenance.

Asset Photos

Level spreader

General Inspection Information

Inspection Summary	BMP is functioning well, but requires routine maintenance
General Inspection Photos	

2022-03-14, BMP-32

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-14 19:02:40 UTC by EPField 01
Location	42.12217207835284, -71.13182021319001
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	14:46
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-32
Address	110 Woodpecker Rd Stoughton, MA 02072
Location	Located on the east side of Woodpecker Rd, where Woodpecker Rd meets Smith Ave;
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Algae, brush, etc.

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Residents dump yard waste here

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Residents appear to be discarding yard debris here. Significant amount of leaves in basin. Also basin has algae. Unsure of current vegetation is the vegetation planned for. Riprap areas either are full of debris or have had any debris washed/eroded away. Town should consider regrading floor of basin to encourage proper movement of water through basin.
Asset Photos	

General Inspection Information

Inspection Summary	BMP appears to be functioning well but needs routine maintenance. Residents appear to be dumping yard debris here
General Inspection Photos	

2022-03-09, BMP-37

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 19:25:14 UTC by EPField 01
Location	42.101105504771496, -71.07957223054349
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	14:08
Weather	Cool, Overcast, Rain
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-37
Address	16 Dennison Court Stoughton, Massachusetts 02072
Location	Between 16 and 20
Type of Inspection	During Storm Event

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full size trees, plants

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	In riprap

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Some scouring

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Channel needs regrading

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Water is able to be conveyed through channel successfully. Leaves, sediment, trash, brush, trees, etc. need to be cleared. Resident appears to be dumping grass clippings in channel

Asset Photos

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines and cattails

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees and plants

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of leaves and brush. Fallen tree limbs

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap is full

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Leaves and brush should be cleared from outlet grate

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Trees, vegetation, leaves, etc. should be removed. Water level was high during site visit. Water is brownish, suggesting a significant amount of organics. Outlet control structure overflow riprap area needs new riprap - now it's full of leaves, sediment, and debris.

Asset Photos

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Maintenance needed to remove leaves, sediment, trees, etc.

General Inspection Photos

2022-03-10, BMP-47

Created	2022-03-08 22:51:03 UTC by EPField 01
Updated	2022-03-10 19:51:55 UTC by EPField 01
Location	42.11029381475337, -71.07682449779759
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	14:24
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-47
Address	60 Bergeron Way Stoughton, MA 02072
Location	Bergeron Way
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Hydro-int Furst Defense Unit. BMP is functioning well. A minor amount of trash was observed. System should be regularly cleaned as specified by manufacture.
Asset Photos	

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Cattails

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and other debris covering base of basin

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed

Asset Inspection Notes	Riprap around inlet needs to be replaced - cattails are growing there. Trash and cart should be removed from basin. Talked to land owner and he's concerned with kids coming into the basin. He would like to see a fence built around the water for safety purposes. Riprap around overflow and overflow outlet need cleaning or replacement. BMP is functioning well but needs routine maintenance
Asset Photos	

General Inspection Information

Inspection Summary	BMP is working well. Homeowner would like to see fence around basin for safety purposes
General Inspection Photos	

2022-03-09, BMP-36

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 18:06:21 UTC by EPField 01
Location	42.103474328434885, -71.08113609732561
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	12:33
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-36
Address	14 Chase Run Stoughton, MA 02072
Location	Located on the northeast corner of the intersection of Chase Run and Sumner Street
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees and plants have grown

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, dead plants throughout basin

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Significant amount of trash throughout

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap is nearly covered

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	1 inlet is fully buried by leaves

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	Yes
Deficiency Notes	Residents appear to be dumping yard debris in basin

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Unsure original BMP purpose/type. Residents appear to be dumping leaves in basin, fully covering 1 inlet. Trash needs to be removed. Full grown trees are in basin, indicating a lack of maintenance.

Asset Photos

Inlet is buried under leaves

Head wall is under leaves

General Inspection Information

Inspection Summary	BMP has naturalized. Trash, sediment, vegetation, dead vegetation, etc. need to be removed

General Inspection Photos

2022-03-10, BMP-76

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-10 20:56:13 UTC by EPField 01
Location	42.12876457740006, -71.1101800616805
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	15:34
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-76
Address	1600 Pennsylvania Avenue Stoughton, Massachusetts 02072
Location	High School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

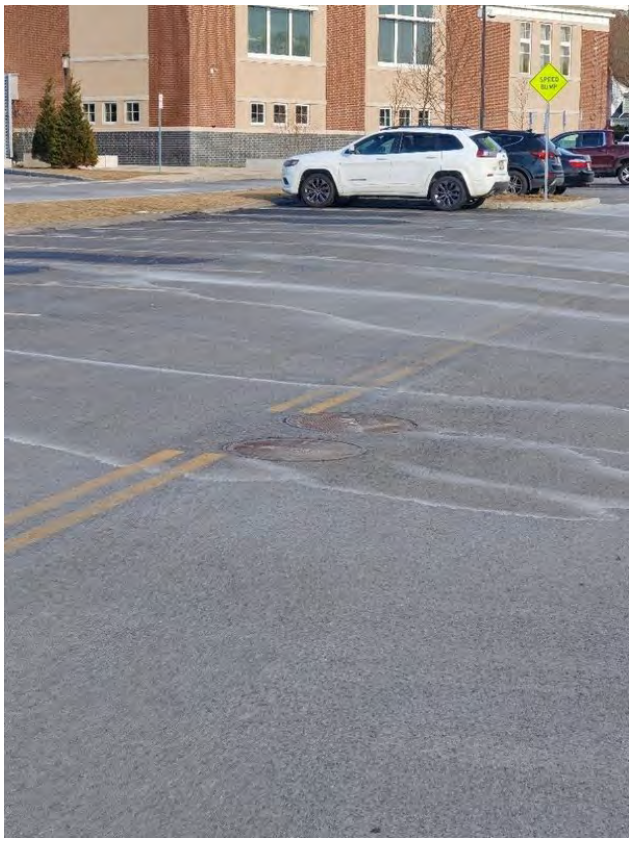
Clogging/Standing Water

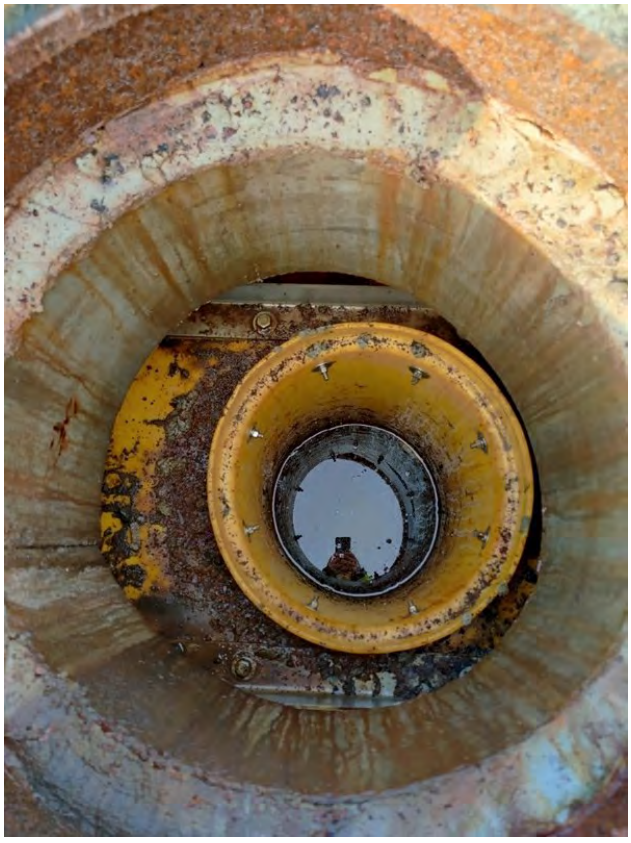
Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

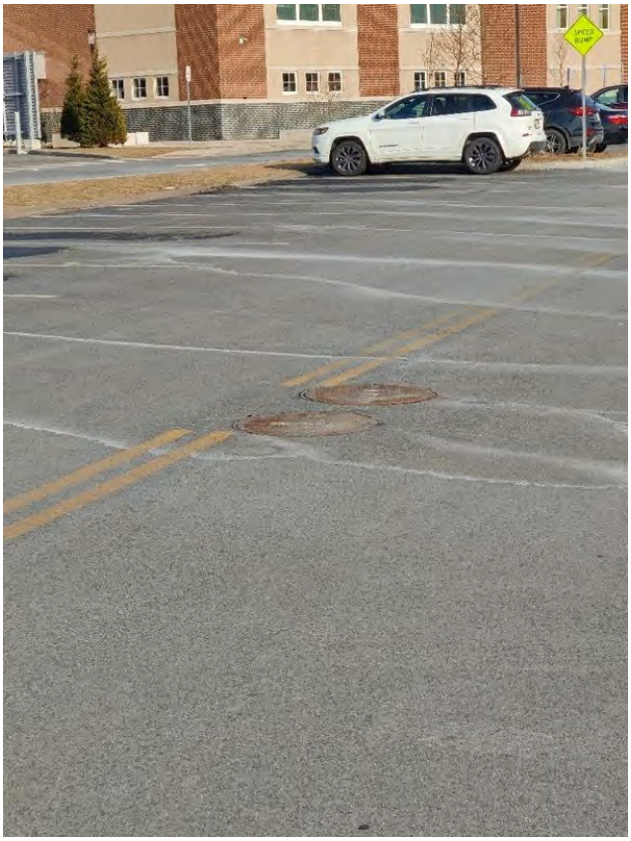
Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Separator appears to be functioning as designed
Asset Photos	



General Inspection Information

Inspection Summary	BMP appears to be functioning as designed

General Inspection Photos



2022-03-14, **BMP-91**

Created	2022-03-14 15:20:36 UTC by EPField 01
Updated	2022-03-14 17:23:20 UTC by EPField 01
Location	42.078959919667575, -71.12906031310558
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	11:20
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-91
Address	33 Fosters Run Stoughton, MA 02072
Location	Side of and behind property of 33 Fosters Run
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Throughout, including trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, etc

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	On channel floor

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Nearly covered by leaves

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Some pooling

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Channel has some areas of pooling - regrading may be needed. Leaves should be removed from inlet. Base of channel has leaves, sediment, some trash, some pooling, and trees - maintenance required.

Asset Photos

Treatment - Extended Detention Basin

Asset Type	Treatment - Extended Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees, plants

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Pooling, debris

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	In front of outlet control structure

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed

Asset Inspection Notes	Excess vegetation, including spruce trees should be cleared from the basin if not intended to be there. Riprap overflow area is covered with leaves and brush - maintenance needed. Basin appears to be generally functioning well. Outlet control structure has some pooling in front and some debris stuck in weir. Currently BMP is slightly marshy. Outlet control structure is slightly clogged and needs maintenance.

Asset Photos

Pooling suggests outlet is slightly clogged

General Inspection Information

Inspection Summary	BMP generally appears to be functioning, but requires routine maintenance.

General Inspection Photos

2022-03-09, BMP-70

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 16:14:14 UTC by EPField 01
Location	42.139502957112384, -71.07684060815933
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	11:01
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-70
Address	187–199 Old Maple St Stoughton, MA 02072
Location	Top of old maple st
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Likely the BMP was designed to have no vegetation, but vegetation currently exisits

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Dead vegetation needs to be removed

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Significant amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Base of swale is covered with sediment. Parts of swale is contains muck.

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Scouring noted

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Issue with water flow due to grading

Other Issues

Deficiency Observed	Yes
Deficiency Notes	Regrading needed

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Stormwater can flow through swale, but significant maintenance is needed. Rip rap needs to be replaced due to sediment and vegetation growth. Trash and dead vegetation observed. Significant amount of dirt and sediment in swale. Swale needs to be regraded to improve stormwater flow.

Asset Photos

General Inspection Information

Inspection Summary	Significant maintenance needed, especially regarding sedimentation, rip rap, and trash
General Inspection Photos	

2022-03-10, BMP-65

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-10 21:29:11 UTC by EPField 01
Location	42.128636234347695, -71.11132494668274
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	16:22
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-65
Address	200 Cushing Street Stoughton, Massachusetts 02072
Location	High School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Trash in manhole

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Trash should be removed (although trash may not be making it to final chamber)
Asset Photos	

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	N/A

Trash/Debris

Deficiency Observed	N/A

Oil/Grease

Deficiency Observed	N/A

Excess Sedimentation

Deficiency Observed	N/A

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	N/A

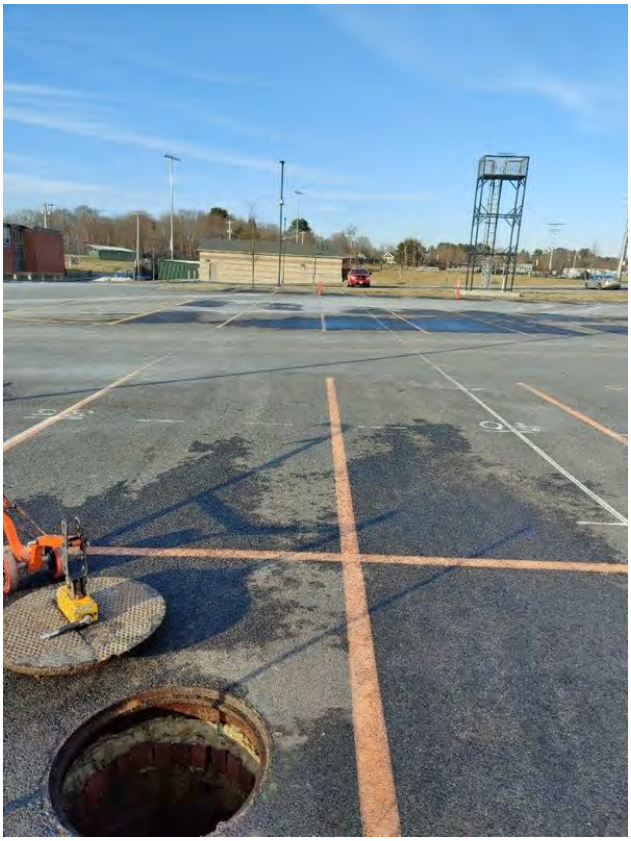
Other Issues

Deficiency Observed	N/A

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	No clean out port to inspect

Asset Photos



General Inspection Information

Inspection Summary	BMP appears to be functioning properly

General Inspection Photos

2022-03-09, BMP-18

Created	2022-03-08 22:51:01 UTC by EPField 01
Updated	2022-03-10 18:02:17 UTC by EPField 01
Location	42.117257456904994, -71.10688132002859
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	15:32
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-18
Address	241 Morton Street Stoughton, Massachusetts 02072
Location	Gibbons Elementary School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Sediment Forebay

Asset Type	Pretreatment - Sediment Forebay

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	No

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Approximately 4” of sediment and dirt at the inlet

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Overall, BMP is very well maintained. The riprap is starting to be filled with leaves and sediment, but does not need to be replaced yet. The inlet needs to be cleaned of sediment, dirt, and leaves. This B,P also has a level spreader
Asset Photos	

Treatment - Bioretention Area / Rain Garden

Asset Type	Treatment - Bioretention Area / Rain Garden

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	No

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	BMP is well maintained
Asset Photos	

Conveyance - Grassed Channel (Biofilter Swale)

Asset Type	Conveyance - Grassed Channel (Biofilter Swale)

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	No

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Swale has check dam. Riprap is starting to be filled with leaves and sediment, but is still in very good shape
Asset Photos	

Check dam

General Inspection Information

Inspection Summary	Overall BMP is well maintained and functioning as designed

General Inspection Photos

2022-03-11, BMP-4

Created	2022-03-08 22:51:02 UTC by EPField 01
Updated	2022-03-11 16:19:06 UTC by EPField 01
Location	42.13314566987629, -71.09633807959874
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	11:06
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-4
Address	110 Rockland St Stoughton, MA 02072
Location	South side of Senior Center and Youth Commission
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of leaves

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of sediment throughout basin, especially on inlet's riprap

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Standing water at outlet. Significant sediment buildup

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Standing water in half of basin

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Significant amount of sediment and leaves on bottom of basin. This has led to standing water within the basin. No outlet or overflow or water treatment mechanism suggests the primary purpose of this basin is infiltration. Areas of stones within basin do not seem to be serving a function - maintenance needed.

Asset Photos

General Inspection Information

Inspection Summary	Basin has significant amount of leaves and sediment which is impeding infiltration. Standing water observed. BMP maintenance needed to ensure basin functions as designed.
General Inspection Photos	

2022-04-13, **BMP-93**

Created	2022-04-13 17:40:52 UTC by EPField 01
Updated	2022-04-13 17:59:17 UTC by EPField 01
Location	42.0899383, -71.1341335
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-04-13
Time	13:40
Weather	Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-93
Address	52 Jordan Drive Stoughton, Massachusetts 02072
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees growing in basin.

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaf litter

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Major erosion. Needs to be regraded.

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Lower inlet pipe blocked.

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Ponding near inlet and outlet

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Structure looks like it was originally designed to be a conveyance BMP, but excess vegetation, leaf litter accumulation, and lack of up keep has led to major ponding. Inlet and outlet pipes are partially covered. Lower outlet pipe from outlet control structure is completely inundated/buried. Rip rap needs to be refreshed, trees growing in structure need to be removed.

Asset Photos

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General Inspection Information

Inspection Summary	BMP is becoming naturalized. Maintenance is necessary.
General Inspection Photos	

General Inspection Photos

2022-03-11, BMP-54

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-11 20:03:43 UTC by EPField 01
Location	42.13092682669637, -71.12113754421006
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	14:20
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-54
Address	1550 Central St Stoughton, MA 02072
Location	Fire department HQ
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	BMP appears to be functioning properly. Maintain/empty as needed.
Asset Photos	

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	3 gallery ports opened. BMP appears to be functioning properly. Maintain as specified by manufacture

Asset Photos

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Phragmites - see planting plan to determine if they are designed

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Excess vegetative growth

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves cover the base of the basin

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Throughout basin

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Site plans identify riprap overflow - if that does exist, the riprap has been buried under brush and dirt and needs to be maintained. Basin should be cleared of dead vegetation, leaves, trash, sediment, and excess live vegetation. The water level partly submerged the inlet, suggesting material has built up in the basin. The inlet to basin that discharges flow from subsurface infiltration system appears to rarely discharge water
Asset Photos	

Design plan identifies this area as the riprap overflow

Inlet discharging flow from subsurface infiltration system

General Inspection Information

Inspection Summary	BMP is generally functioning properly. Routine maintenance needed

General Inspection Photos

2022-03-11, BMP-84

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-04-11 16:30:33 UTC by EPField 01
Location	42.12402816601129, -71.0797281445922
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	12:00
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-84
Address	246 Curtis Ave Stoughton, MA 02072
Location	Access from William Kelley Road cup-de-sac
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No
Deficiency Notes	N/A

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees have grown up in basin

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Excessive leaves, bush, and fallen tree limbs

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Throughout basin

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Sediment and leaves around and in inlet and outlet need to be removed

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Some evidence of scouring

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Basin should be regraded

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Somebody has cut down some trees, but more trees should be removed. Unsure of original BMP design and type. Standing water was observed in half the basin. All riprap areas should be replaced. Stormwater appears to take unusual path through basin - basin may need to be regraded. Leaves, other dead vegetation, and sediment should be removed from basin. Debris near outlet control structure needs to be removed.

Asset Photos

Inlet to bmp

Outlet

Overflow outfall

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Significant maintenance needed. Unsure original BMP design/type.
General Inspection Photos	

2022-03-10, **BMP-90**

Created	2022-03-10 16:25:18 UTC by EPField 01
Updated	2022-03-11 13:55:22 UTC by EPField 01
Location	42.130126830264985, -71.10887937247753
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	11:25
Weather	Cool, Overcast, Snow
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-90
Address	232 Pearl Street Stoughton, Massachusetts 02072
Location	Stoughton high school
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

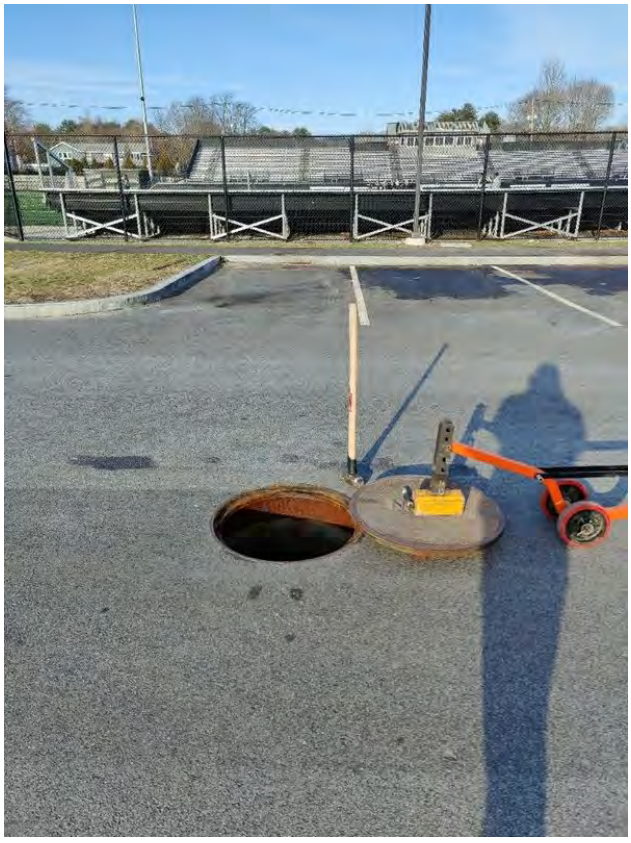
Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Hydro-Int Downstream Defender unit. BMP appears to be functioning properly
Asset Photos	



General Inspection Information

Inspection Summary	BMP appears to be functioning properly

General Inspection Photos

2022-03-09, BMP-15

Created	2022-03-08 22:51:02 UTC by EPField 01
Updated	2022-03-10 18:19:32 UTC by EPField 01
Location	42.118034991573495, -71.10584556436788
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	15:33
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-15
Address	201 Morton Street Stoughton, Massachusetts 02072
Location	Gibbons Elementary School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Sediment Forebay

Asset Type	Pretreatment - Sediment Forebay

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Plants are growing between the riprap stones

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and dead plants

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Soil is building up in riprap. Paved swale has an excessive amount of sediment/soil

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	Yes
Deficiency Notes	Catch basin is filled andcovered with dirt and leaves

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	This section of the BMP consists of a paved swale, catch basin, forebay, and level spreader. Accumulated debris is a big issue. Plants, sediment, leaves, and other debris should be cleared.

Asset Photos

Paved swale

Catch basin is nearly buried

Treatment - Bioretention Area / Rain Garden

Asset Type	Treatment - Bioretention Area / Rain Garden

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	The dead leaves and other organic debris have created a layer at the base of the basin

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Dirt has accumulated

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed

Asset Inspection Notes	This BMP needs to be cleared of dead debris and excess vegetation. The debris makes a layer on the base of the basin. Riprap needs to be replaced. BMP is likely still functioning, but maintenance is needed before the vegetation fully takes over

Asset Photos

General Inspection Information

Inspection Summary	BMP is functioning but needs maintenance
General Inspection Photos	

2022-03-10, BMP-13

Created	2022-03-08 22:51:02 UTC by EPField 01
Updated	2022-03-11 16:47:23 UTC by EPField 01
Location	42.122561241423014, -71.09855149047478
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	12:10
Weather	Clear, Cool
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-13
Address	84 Park St Stoughton, MA 02072
Location	Stoughton Public Library's parking lot
Type of Inspection	Regular

BMP Inspection

Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

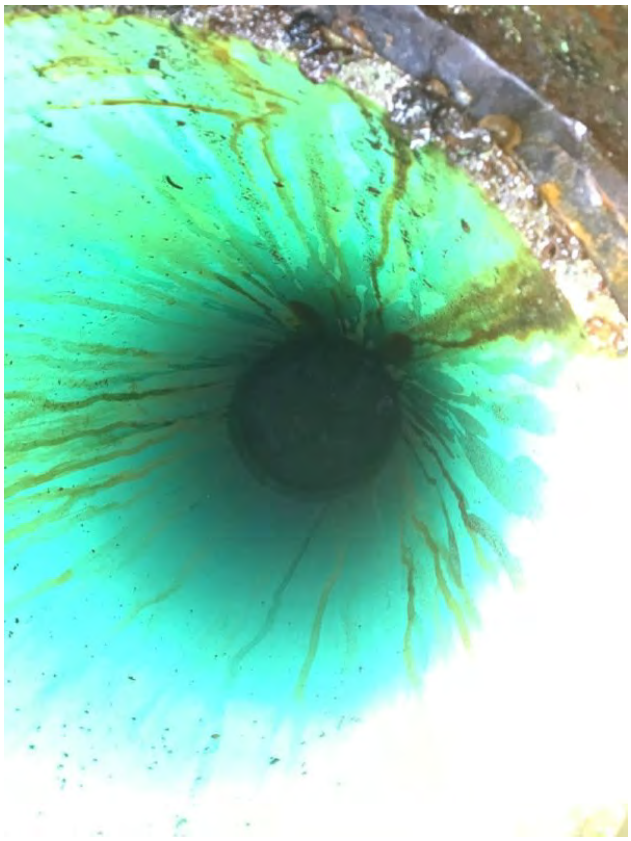
Deficiency Observed	No

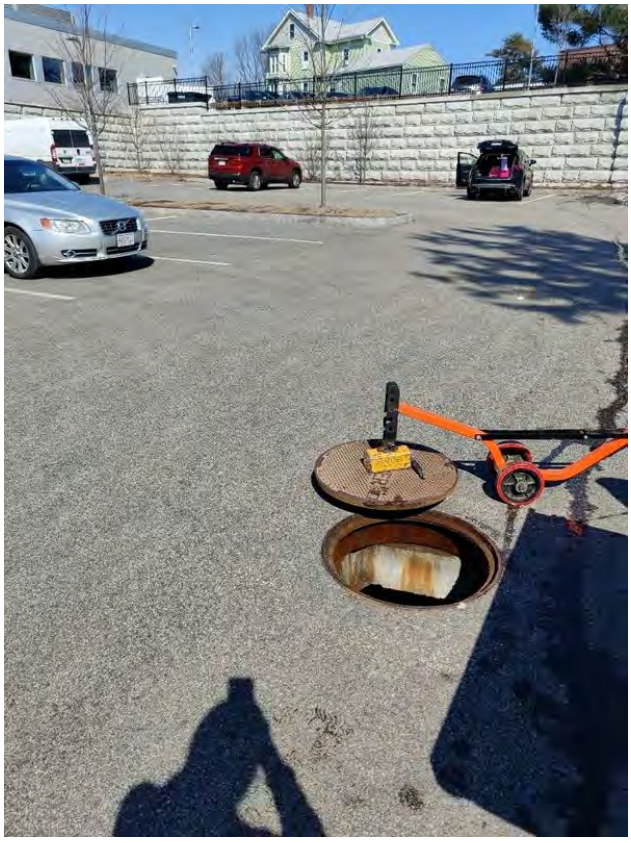
Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Clean out port had a moderate amount of sediment. BMP appears to be functioning well. Town to perform regular cleanings as design specified. EP opened all nearby manholes to attempt to find a water quality unit. A weir was found in the manhole directly upstream of the infiltration system.
Asset Photos	





General Inspection Information

Inspection Summary	Maintain as designed
General Inspection Photos	

2022-03-09, BMP-61

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-03-09 14:57:31 UTC by EPField 01
Location	42.1628209635288, -71.06559357094204
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	08:58
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-61
Address	45 Drinkwater Ave Stoughton, MA 02072
Location	Corner of Drinkwater Ave and Willow St
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	No

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant dead vegetation, including leaves, grass clippings, dead trees and branches. Residents appear to be dumping debris here

Excess Salt

Deficiency Observed	N/A

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash noted

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Unable to see outlet due to dead vegetation

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Unable to see inlet due to dead vegetation

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Residents appear to be dumping leaves, grass clippings, and tree limbs here. This has led to significant dead vegetation. A layer of leaves appears to be covering the bottom of the basin. Water in basin is brown, suggesting significant organic material. Also water level is high - inlet/outlets may be clogged due to vegetation. Unable to investigate closely due to fence

Asset Photos

General Inspection Information

Inspection Summary	Major maintenance needed. Minimal treatment is occurring. Residents need to understand purpose of basin

General Inspection Photos

2022-03-10, BMP-25

Created	2022-03-08 22:51:02 UTC by EPField 01
Updated	2022-03-11 19:10:37 UTC by EPField 01
Location	42.116732456998946, -71.10885053873062
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	15:32
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-25
Address	235 Morton St Stoughton, MA 02072
Location	Gibbons Elementary School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	No

Clogging/Standing Water

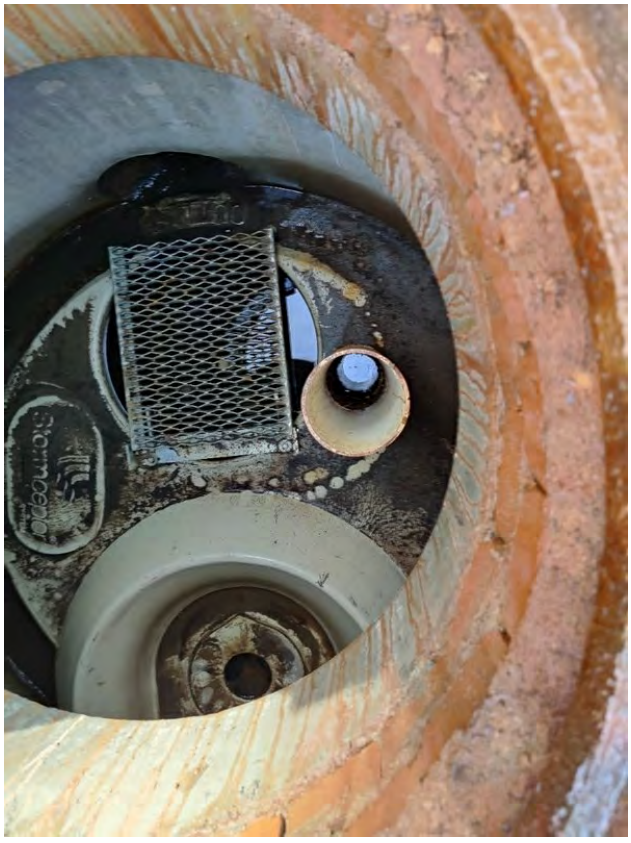
Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Stormceptor. No excessive sediment or oils noted. Town to clean regularly as directed by proprietary separator instructions.
Asset Photos	



Infiltration - Subsurface Structure

Asset Type	Infiltration - Subsurface Structure

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	N/A

Trash/Debris

Deficiency Observed	N/A

Oil/Grease

Deficiency Observed	N/A

Excess Sedimentation

Deficiency Observed	N/A

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	N/A

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Inspection clean outs port is located on dirt/impervious area - EP unable to locate. Subsurface structure is located below dirt. Bus drivers complained about lack of paved area to park. Apparently this area gets muddy. Outfall was observed to be flowing - thus system conveys water.
Asset Photos	

General Inspection Information

Inspection Summary	BMP unable to be fully inspected. No issues observed. EP also visited on 3/11 when the snow had melted and still could not find cleanout port

General Inspection Photos

2022-03-10, BMP-75

Created	2022-03-08 22:51:06 UTC by EPField 01
Updated	2022-03-11 13:55:56 UTC by EPField 01
Location	42.12910661700469, -71.11109152436256
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-10
Time	15:35
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-75
Address	205 Cushing St Stoughton, MA 02072
Location	High School
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Hydro-Int Downstream Defender. BMP appears to be functioning properly
Asset Photos	

General Inspection Information

Inspection Summary	BMP appears to be functioning properly

General Inspection Photos

2022-03-09, BMP-67

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 18:48:08 UTC by EPField 01
Location	42.100042950601974, -71.07801780300738
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	13:23
Weather	Cool, Overcast, Snow
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-67
Address	13 Fords Run Stoughton, MA 02072
Location	Between/behind 13 & 9 Fords Run
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees in channel

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and debris

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Trash visible

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	In riprap

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Some s scouring

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Some along channel, needs regrading

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Channel needs to be cleared of vegetation, leaves, debris, trash, sediment, etc. replace riprap. Stormwater is able to flow through channel

Asset Photos

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full trees observed

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of leaves and brush

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap is full

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Vegetation surrounds outlet

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Basin bottom appears to be dominated by leaves and trees. Unclear whether ponding was intended in design of basin.

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Full grown trees are throughout BMP. The BMP overflow riprap area is covered with leaves, sediment, and sticks. Leaves and sediment cover the gas of the basin. BMP appears to have not been maintained recently.
Asset Photos	

Riprap overflow

General Inspection Information

Inspection Summary	Drainage channel and basin require maintenance, especially regarding grading, leaves, trash, trees, and riprap. BMP is becoming naturalized. Confirm basin BMP type.

General Inspection Photos

2022-03-30, **BMP-92**

Project	MVGP - 10/05 - Friday
Created	2022-03-30 18:06:49 UTC by EPField 01
Updated	2022-03-30 18:14:15 UTC by EPField 01
Location	42.1231466, -71.1327197
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-30
Time	14:06
Weather	Cool, Clear
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-92
Address	87 Woodpecker Road Stoughton, Massachusetts 02072
Location	Between woodpecker Rd and Powell st
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes

Deficiency Notes	Moderate amount of trash throughout

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Significant

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Riprap needs attention

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Unsure original BMP type - need site plans. Full trees have grown. Vines are an issues and growing on all vegetation. Leaves and other dead vegetation need to be removed. A significant amount of sediment and stones seem to have washed in. Riprap area in front of inlet needs maintenance - stones are full of sediment and likely eroded from original location. Pooling is likely at inlet. Trash needs to be removed. Residents may be dumping yard debris here as well. BMP need significant maintenance.

Asset Photos

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Significant maintenance is needed.
General Inspection Photos	

2022-03-14, BMP-26

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-14 14:46:24 UTC by EPField 01
Location	42.09326141483195, -71.11638933191448
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	10:38
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-26
Address	1546 West St Stoughton, MA 02072
Location	At the immediate entrance of Gibson Way off of West Street, directly in the center of road
Type of Inspection	Regular

BMP Inspection

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	N/A

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Unsure separator type/brand. Flowing water is audible. BMP appears to be functioning well
Asset Photos	

General Inspection Information

Inspection Summary	BMP appears to be functioning properly
General Inspection Photos	

2022-03-14, BMP-82

Created	2022-03-08 22:51:07 UTC by EPField 01
Updated	2022-03-14 18:11:02 UTC by EPField 01
Location	42.07866419353271, -71.13348116457648
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-14
Time	13:48
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-82
Address	128 Eagle Rock Rd Stoughton, MA 02072
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Vines and plants in channel

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, etc.

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Covering parts of the channel fooor

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Pooling and stagnant water

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Unsure what base of channel should consist of. Generally channel functions, but water is able to pool and stagnate in areas - town should consider regrading parts of the channel. Channel contains trees, busy, and dead vegetation - vegetation needs maintenance. Some of the riprap is full of sediment and debris and also needs maintenance.

Asset Photos

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, brush, etc.

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	On parts of the basin floor

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed

Asset Inspection Notes	A riprap swale cuts through basin from channel to outlet. This riprap has sediment and leaves in it and needs to be maintained. Riprap overflow area also is full and needs maintenance. Trees from basin should be removed if not intended to be there, especially tree right before outlet control structure.

Asset Photos

Riprap overflow area

General Inspection Information

Inspection Summary	BMP appears to be functioning well but needs routine maintenance

General Inspection Photos

2022-03-09, BMP-53

Created	2022-03-08 22:51:03 UTC by EPField 01
Updated	2022-03-09 15:18:53 UTC by EPField 01
Location	42.148006630466895, -71.08429872006477
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	10:06
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-53
Address	52 Pondview Ln Stoughton, MA 02072
Location	Between 39 Hana Dr and 52 Pondview Ln
Type of Inspection	Regular

BMP Inspection

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significantly amount

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, brushes, grass clippings, fallen tree limb

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Needs clearing

Inlet/Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Partially covered by dead vegetation

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Standing water observed - unsure if that's the design intent

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP was fenced in during inspection. Significant amount of debris needs to be cleared. Inlets and outlet need maintenance as well. Full trees have grown in BMP. BMP is being naturalized. EP unable to locate overflow outlet (which would be outfall) to wetlands - town needs to locate/expose.

Asset Photos

General Inspection Information

Inspection Summary	Major maintenance required to remove vegetation. Inlets/outlet needs maintenance as well. Overflow outlet (outfall to wetlands) needs to be located.
General Inspection Photos	

2022-03-11, BMP-5

Created	2022-03-08 22:51:04 UTC by EPField 01
Updated	2022-04-11 13:31:18 UTC by EPField 01
Location	42.12295962737044, -71.08476866036654
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-11
Time	13:32
Weather	Clear, Warm
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-5
Address	60 Christie Murphy Drive Stoughton, Massachusetts 02072
Location	Within bend of Christie Murphy Drive
Type of Inspection	Regular

BMP Inspection

Treatment - Extended Dry Detention Basin

Asset Type	Treatment - Extended Dry Detention Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees, brush

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Dead plants and leaves

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Moderate amount of trash

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	All riprap areas are full of sediment and debris

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	Yes
Deficiency Notes	A headwall has started to crack

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Vegetation including vines and trees should be cut back. All riprap should be replaced. Trash should be removed. BMP appears to be functioning. Town should ensure the plants currently present were the ones designed to be there.

Asset Photos

Inlet

Inlet

Overflow outfall

Pretreatment - Proprietary Separator

Asset Type	Pretreatment - Proprietary Separator

Inspection Information

Invasive Species

Deficiency Observed	N/A

Soil Erosion

Deficiency Observed	N/A

Excess Vegetation

Deficiency Observed	N/A

Dead Vegetation

Deficiency Observed	N/A

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	No

Outlet Condition

Deficiency Observed	N/A

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	N/A

Cracking

Deficiency Observed	N/A

Clogging/Standing Water

Deficiency Observed	N/A

Other Issues

Deficiency Observed	N/A

Asset Inspection Summary

Asset Overall Condition	1 - System operating as designed - No issues
Asset Inspection Notes	Unsure BMP proprietary separator type. It appears to be functioning. Moderate amount of trash visible, no oils. Metal device is visible at outlet pipe.
Asset Photos	

General Inspection Information

Inspection Summary	BMP is becoming naturalized. Town to remove excess vegetation, sediment, and trash.

General Inspection Photos

2022-03-09, BMP-69

Created	2022-03-08 22:51:05 UTC by EPField 01
Updated	2022-03-09 17:57:45 UTC by EPField 01
Location	42.104279882942706, -71.07937284389348
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-03-09
Time	12:44
Weather	Cool, Overcast
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-69
Address	16 Penniman Cir Stoughton, MA 02072
Location	Located between #24, and #16 Penniman Circle, about 100 ft back into the woods.
Type of Inspection	Regular

BMP Inspection

Conveyance - Drainage Channel

Asset Type	Conveyance - Drainage Channel

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees and other vegetation have grown in channel

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves and other debris

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash throughout

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Covers riprap

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Significant scouring and pooling

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Pooling at inlet

Other Issues

Deficiency Observed	Yes
Deficiency Notes	Consider regrading

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is generally clogged by sediment and leaves. Riprap needs replacing. Regrading needed, especially at inlet

Asset Photos

Treatment - Wet Basin

Asset Type	Treatment - Wet Basin

Inspection Information

Invasive Species

Deficiency Observed	Yes
Deficiency Notes	Cattails and vines

Soil Erosion

Deficiency Observed	No

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Full trees have grown

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Significant amount of leaves and other dead vegetation

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minor amount of trash throughout

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	On riprap

Outlet Condition

Deficiency Observed	Yes
Deficiency Notes	Partly covered by debris

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	Yes
Deficiency Notes	Water is pooling on base of leaves in basin, not sure if designed as such

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Unsure original BMP type. Base of basin is dead leaves. Cattails, trees, plants, trash, sediment need to be removed. Outlet control structure is partially covered by debris, but appears to be functioning. Standing water in basin - regrading and dirt removal is required if that was not intended.
Asset Photos	

General Inspection Information

Inspection Summary	Both drainage channel and basin need maintenance to remove excess vegetation, trash, sediment, leaves, etc. BMP is becoming naturalized

General Inspection Photos

2022-05-16, **BMP-94**

Project	MVGP - 10/05 - Friday
Created	2022-05-16 16:53:56 UTC by EPField 01
Updated	2022-05-16 17:04:08 UTC by EPField 01
Location	42.1139098, -71.1127486
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-05-16
Time	12:53
Weather	Clear, Hot
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-94
Address	11 Hunt Drive Stoughton, Massachusetts 02072
Location	Behind 11 Hunt Dr
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	Yes
Deficiency Notes	Sides of basin

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves, branches

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	No

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Infiltration basin has later of sediment and debris

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	Yes
Deficiency Notes	Erosion. Riprap needs maintenance

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	BMP is becoming naturalized. Numerous trees have grown up. Unsure what base of basin should be - it's currently dead and live vegetation. Inlet riprap needs to be replaced. Trash throughout basin, including dog water bags. Regrading of basin may be needed.
Asset Photos	

General Inspection Information

Inspection Summary	BMP has become naturalized. Significant maintenance needed.
General Inspection Photos	

2022-05-16, **BMP-95**

Created	2022-05-16 16:10:30 UTC by EPField 01
Updated	2022-05-16 16:25:27 UTC by EPField 01
Location	42.11262776059157, -71.10757146030664
Status	Inspected

General Information

Client	Town of Stoughton
Date	2022-05-16
Time	12:10
Weather	Clear, Hot
Inspector	Annie Tucker

BMP Information

BMP ID	BMP-95
Address	80 Whitten Ave Stoughton, MA 02072
Location	Corner of Whitney and Whitten
Type of Inspection	Regular

BMP Inspection

Infiltration - Infiltration Basin

Asset Type	Infiltration - Infiltration Basin

Inspection Information

Invasive Species

Deficiency Observed	No

Soil Erosion

Deficiency Observed	Yes
Deficiency Notes	Sides of basin

Excess Vegetation

Deficiency Observed	Yes
Deficiency Notes	Trees

Dead Vegetation

Deficiency Observed	Yes
Deficiency Notes	Leaves

Excess Salt

Deficiency Observed	No

Trash/Debris

Deficiency Observed	Yes
Deficiency Notes	Minimal

Oil/Grease

Deficiency Observed	No

Excess Sedimentation

Deficiency Observed	Yes
Deficiency Notes	Riprap

Outlet Condition

Deficiency Observed	No

Inlet/Outlet Condition

Deficiency Observed	No

Outlet Area Erosion

Deficiency Observed	No

Cracking

Deficiency Observed	No

Clogging/Standing Water

Deficiency Observed	No

Other Issues

Deficiency Observed	No

Asset Inspection Summary

Asset Overall Condition	2 - System operating as designed - Maintenance needed
Asset Inspection Notes	Basin needs routine maintenance. Tree growth and excess plants - most vegetation likely is not impeding function of BMP, except bush near inlet and outlet. That area appears to have originally been riprap. Town should clean out sediment, soil, and leaves from riprap. Sides of basin have some signs of erosion and town should consider reseeding or other stabilizing methods. Town to follow BMP mowing schedule.

Asset Photos

General Inspection Information

Inspection Summary	BMP is likely functioning, but routine maintenance needed.

General Inspection Photos

Certification

Authorized Representative (Optional): All reports, including SWPPPs, inspection reports, annual reports, monitoring reports, reports on training and other information required by this permit must be signed by a person described in Appendix B, Subsection 11.A or by a duly authorized representative of that person in accordance with Appendix B, Subsection 11.B. If there is an authorized representative to sign MS4 reports, there must be a signed and dated written authorization.
The authorization letter is:

☐ Attached to this document (document name listed below)

☐ Publicly available at the website below

"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

June 24, 2021

Mr. Marc J. Tisdelle
Town Engineer
Town Hall
10 Pearl Street
Stoughton, MA 02072

RE: NPDES Phase II Stormwater Assistance
Pollution Prevention & Good Housekeeping for Municipal Operations
Stormwater Treatment Structure Inspections

Dear Mr. Tisdelle,

On April 13, 2016, the Environmental Protection Agency (EPA) released the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, which became effective July 1, 2018. The Permit imposes a host of new requirements for the Town of Stoughton and all communities under its jurisdiction.

In order to address the Permit requirements (Section 2.3.7.a.iii.6) for the stormwater treatment structure inspections, Environmental Partners (EP) completed observations of 18 of the Town's stormwater treatment best management practices (BMPs) to provide inventory and condition data. During the site visit, EP inventories some BMPs that previously were not included in the Town's BMP inventory. The locations of all BMPs inspected are shown on Figure 1 (attached), and the inspection results are summarized in Table 1.

In summary, EP conducted BMP site visits on April 8, 2021, and the following maintenance issues were identified.

ID	BMP Type	Maintenance Issues
BMP-32	Wet Basin	Significant leaves and dead vegetation; dumped trash and yard brush.
BMP-35	Drainage Channel	Overgrowth, significant vines, leaves, trash, silt, and scouring.
BMP-36	Infiltration Basin	Significant overgrowth, trash, and leaves around entire area; significant overgrowth at one of the two outlets.
BMP-37	Wet Basin	Vines, cattails, dead vegetation, and overgrowth.
BMP-39	Drainage Channel	Dead vegetation and overgrowth.

ID	BMP Type	Maintenance Issues
BMP-41	Dry Detention Basin	Trees and dead vegetation; basin half-full of sediment.
BMP-64	Drainage Channel	Overgrowth, vines, and leaves.
BMP-67	Wet Basin	Significant overgrowth; some clogging at outlet control structure.
BMP-68	Drainage Channel	Significant vines, trash, leaves, and sediment.
BMP-69	Wet Basin	Significant cattails, trash, and leaves.
BMP-70	Drainage Channel	Vines, cattails, and trash; evidence of scouring; excessive silt and debris; erosion on sides of channel.
BMP-71	Wet Basin	Significant cattails and general overgrowth; outlets cracked, needing regrading, or overgrown; clogging at inlets.
BMP-72	Wet Basin	Outfall overgrown; trees grown up; leaf litter, dead vegetation, and overgrowth; visible oil sheen.

Completed BMP inspection data forms with photographs are also attached. We very much appreciate the opportunity to work with the Town of Stoughton on this project. Please call or e-mail us if you have any questions or require additional information.

Sincerely,

Environmental Partners
Scott D. Turner, PE, AICP, LEED AP ND
Director of Planning
P: 617.657.0280
E: sdt@envpartners.com

Environmental Partners
Vern S. Lincoln
Project Scientist
P: 617.657.0275
E: vsl@envpartners.com

Figures:	Figure 1: BMP Inspection Locations Figure 2: BMP Inspection Locations
Tables:	1: Stormwater BMP Inspection Table
Attachments:	BMP Inspection Data Forms

Inspected BMP Locations

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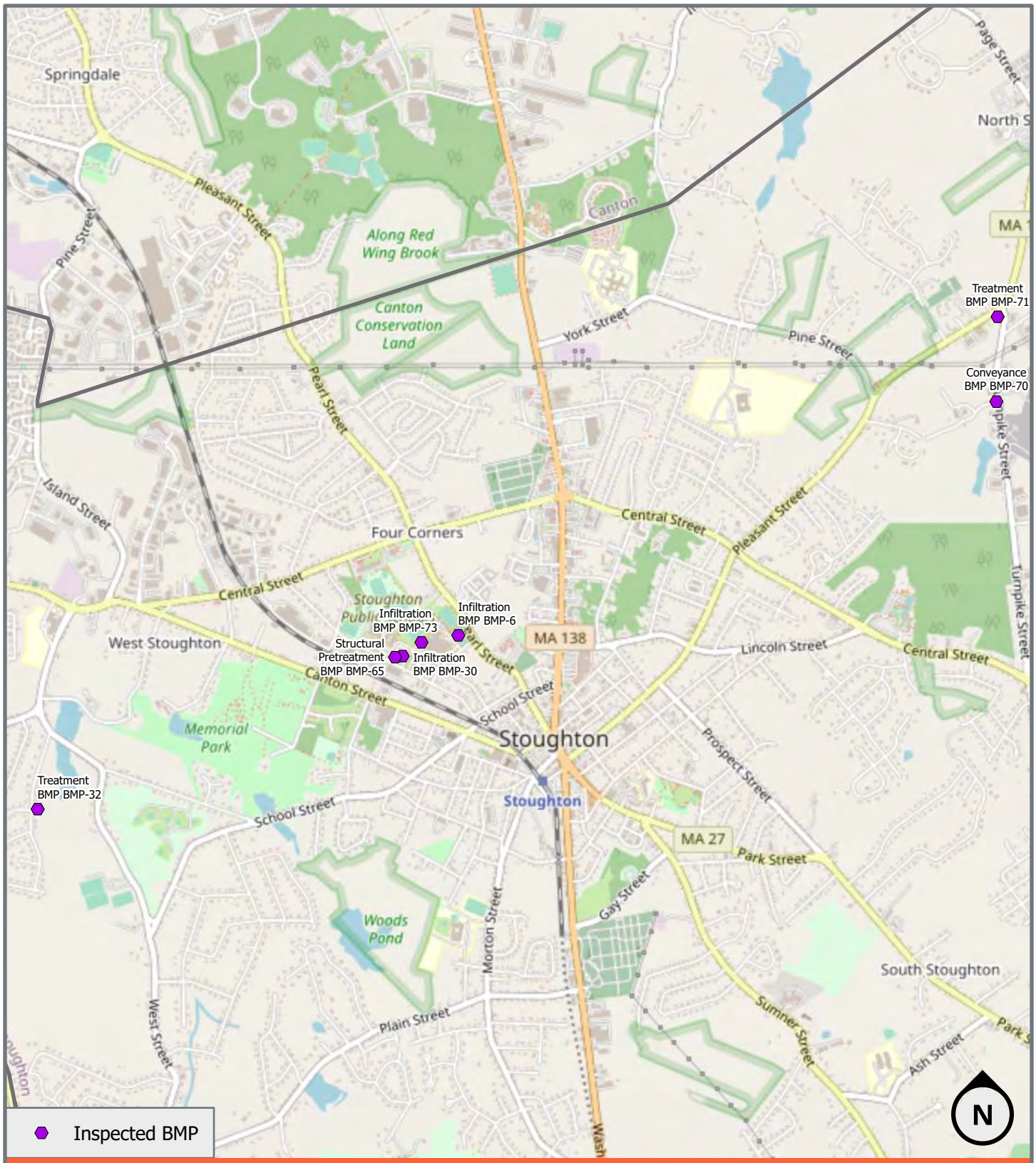

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Figure 1: BMP Inspections Locations

Stoughton, Massachusetts

0 0.25 0.5 1 Miles

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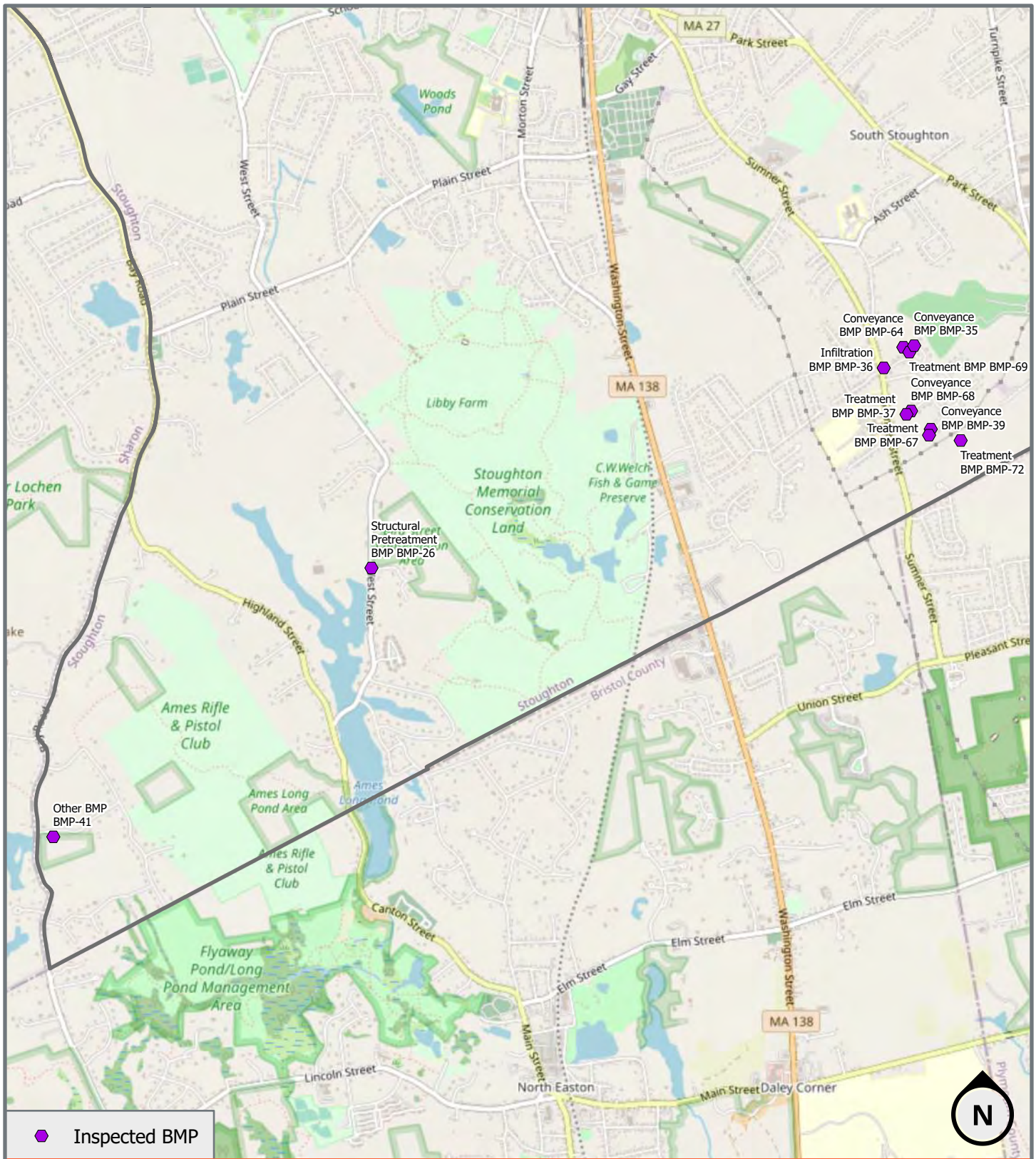

ENVIRONMENTAL PARTNERS

Figure 2: BMP Inspections Locations

Stoughton, Massachusetts

0 0.25 0.5 1 Miles

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Table 1

Stormwater BMP Inspection Table

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ENVIRONMENTAL PARTNERS

Table 1: Stormwater BMP Inspection Table

BMP ID	Date	Weather	Location	Facility	BMP Category	BMP Type	Type of Inspection	Invasive Species	Soil Erosion	Excess Vegetation	Dead Vegetation	Excess Salt	Trash/ Debris	Oil/Grease	Excess Sediment	Outlet Condition	Inlet/Outlet Condition	Outlet Erosion	Cracking	Clogging	Other
BMP-6	4/8/2021	Clear	On the western side of the parking lot next to the tennis courts of Stoughton High School.	Stoughton High School	Infiltration BMP	Subsurface Structure	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-26	4/8/2021	Clear	At the immediate entrance of Gibson Way off of West Street, directly in the center of the road.	2–98 Gibson Way Stoughton MA 02072 US	Structural Pretreatment BMP	Proprietary Separator	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-30	4/8/2021	Clear	On the eastern edge of the parking lot next to the soccer fields of Stoughton High School.	Stoughton High School	Infiltration BMP	Subsurface Water Quality Structure	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-32	4/8/2021	Clear	Located on the east side of Woodpecker Rd, where Woodpecker Rd meets Smith Ave; About 50 feet from the edge of the road.	110 Woodpecker Rd Stoughton MA 02072 US	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-35	4/8/2021	Clear	Located between #24, and #16 Penniman Circle.	24 Penniman Cir Stoughton	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory
BMP-36	4/8/2021	Clear	Located on the northeast corner of the intersection of Chase Run and Sumner Street; Across the road from #7 Chase Run.	14 Chase Run Stoughton	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Unsatisfactory	Not Applicable	Unsatisfactory	Not Applicable	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-37	4/8/2021	Clear	Located directly behind #16 Dennison Court, in the woods.	16 Dennison Ct Stoughton	Treatment BMP	Wet Basin	Regular	Unsatisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-39	4/8/2021	Clear	Located between #9, and #13 Fords Run in the tree line.	13 Fords Run Stoughton	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-41	4/8/2021	Clear	Located about 300 feet down Turnstone Terrace, on the right (south) side of the road, about 55 feet from the edge, in the tree-line.	33 Turnstone Terr Stoughton	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-64	4/8/2021	Clear	Located in the woods behind #30 Chase Run.	30 Chase Run Stoughton	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-65	4/8/2021	Clear	Located on the west side of the parking lot next to the soccer fields of Stoughton High School.	Stoughton High School	Structural Pretreatment BMP	Proprietary Separator	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-67	4/8/2021	Clear	Located in between #9, and #13 Fords Run, about 125 feet back into the woods.	13 Fords Run Stoughton	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory
BMP-68	4/8/2021	Clear	Located in front of #16 Dennison Way, near the southeast corner of the house.	16 Dennison Ct Stoughton	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory

ENVIRONMENTAL PARTNERS

Table 1: Stormwater BMP Inspection Table

BMP ID	Date	Weather	Location	Facility	BMP Category	BMP Type	Type of Inspection	Invasive Species	Soil Erosion	Excess Vegetation	Dead Vegetation	Excess Salt	Trash/ Debris	Oil/Grease	Excess Sediment	Outlet Condition	Inlet/Outlet Condition	Outlet Erosion	Cracking	Clogging	Other
BMP-69	4/8/2021	Clear	Located between #24, and #16 Penniman Circle, about 100ft back into the woods.	16 Penniman Cir Stoughton	Treatment BMP	Wet Basin	Regular	Unsatisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-70	4/8/2021	Clear	Located about 20 feet down the road from the entrance of Old Maple Street.	187–199 Old Maple St Stoughton	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Unsatisfactory
BMP-71	4/8/2021	Clear	In the fenced in area to the east of a small parking lot off of Pleasant St.	988–1098 Pleasant St Stoughton	Treatment BMP	Wet Basin	Regular	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory
BMP-72	4/8/2021	Clear	In the woods about 450 feet southeast from Fords Run.	Stoughton	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-73	4/8/2021	Clear	Northwest corner of Stoughton High School.	Stoughton High School	Infiltration BMP	Subsurface Structure	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory

BMP Inspection Data Form

BMP-6

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-6, Infiltration BMP

Created	2021-04-01 15:01:41 UTC by EPField 01
Updated	2021-04-16 13:51:19 UTC by EPField 01
Location	42.1294585531, -71.1076876269
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-06
Time	10:23
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-6
Location	On the western side of the parking lot next to the tennis courts of Stoughton High School.
BMP Category	Infiltration BMP
BMP Type - Infiltration	Subsurface Structure
Address	8 Adams Street Stoughton, Massachusetts 02072
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Opened two outlet manholes with weirs. No sediment observed
Photos	

BMP Inspection Data Form

BMP-26

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-26, Structural Pretreatment BMP

Created	2021-04-01 15:01:39 UTC by EPField 01
Updated	2021-04-16 13:50:47 UTC by EPField 01
Location	42.093276596, -71.1163080856
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	13:13
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-26
Location	At the immediate entrance of Gibson Way off of West Street, directly in the center of the road.
BMP Category	Structural Pretreatment BMP
BMP Type - Structural Pretreatment	Proprietary Separator
Address	2–98 Gibson Way Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Heard water flowing. Some standing water in unit, but generally appears to be fine. Separator type is unclear

ENVIRONMENTAL PARTNERS

Photos

BMP Inspection Data Form

BMP-30

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-30, Infiltration BMP

Created	2021-04-01 15:01:40 UTC by EPField 01
Updated	2021-04-16 13:50:28 UTC by EPField 01
Location	42.1286596318, -71.1108299794
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	14:38
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-30
Location	On the eastern edge of the parking lot next to the soccer fields of Stoughton High School.
BMP Category	Infiltration / TreatmentBMP
BMP Type - Infiltration	Subsurface Water Quality Unit
Address	Adams Street Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

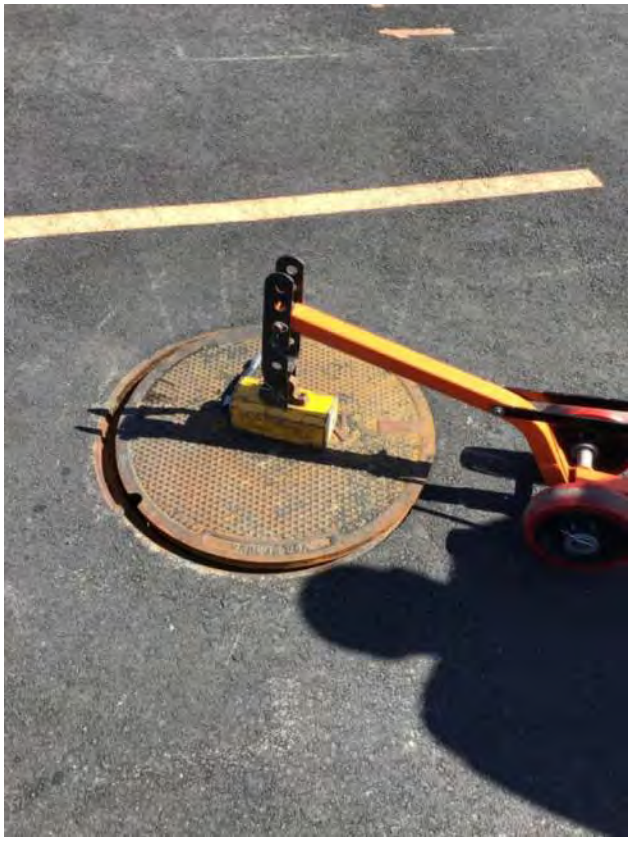
Is Status of BMP Satisfactory?	Yes

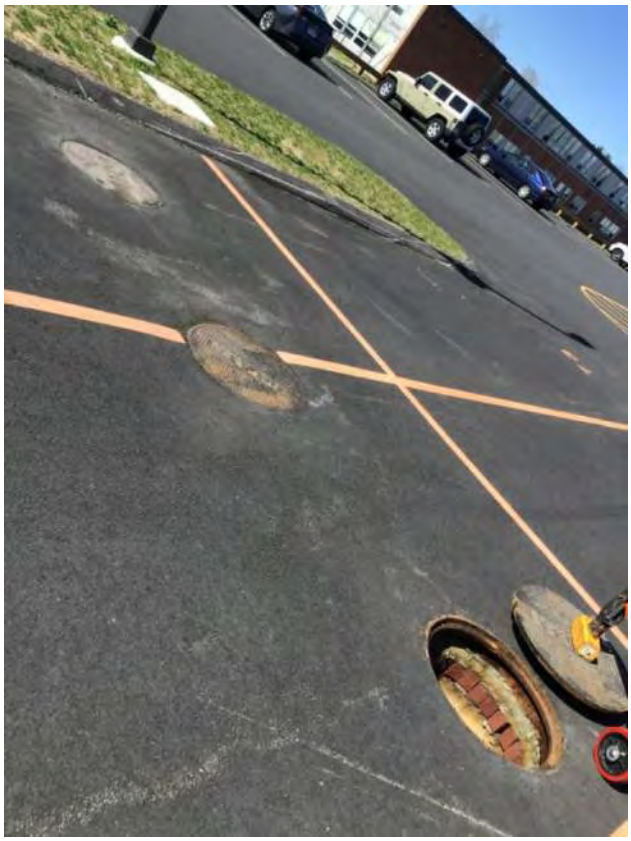
Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Underground infiltration field. No sediment in manhole
Photos	





BMP Inspection Data Form

BMP-32

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-32, Treatment BMP

Created	2021-04-01 15:01:40 UTC by EPField 01
Updated	2021-04-16 13:49:44 UTC by EPField 01
Location	42.1221807041, -71.1318208141
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	14:10
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-32
Location	Located on the east side of Woodpecker Rd, where Woodpecker Rd meets Smith Ave; About 50 feet from the edge of the road.
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	110 Woodpecker Rd Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant leaves and dead vegetation
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash and yard brush dumped
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Residents appear to dump leaves and brush here. Need to confirm BMP type. 2 outlet control structures. Trash visible. Lots of algae. Considerable standing water, unsure if that is intended. Overflow pipes and overflow pipe riprap areas needs clearing. Unsure if overflow pipes are clogged.
Photos	

BMP Inspection Data Form

BMP-35

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-35, Conveyance BMP

Created	2021-04-01 15:01:40 UTC by EPField 01
Updated	2021-04-16 13:49:23 UTC by EPField 01
Location	42.104622, -71.079044
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	10:18
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-35
Location	Located between #24, and #16 Penniman Circle.
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	24 Penniman Cir Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Vines

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Overgrown
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Leaves, trash
Corrective Action Needed	Remove Trash/Debris

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Silt
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Scouting

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	At base of outlet
Corrective Action Needed	Understand intended design, maintain

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Standing water observed below inlet; need to view site plans and determine if that is intended, or else re-grade swale. Add swale to GIS
Photos	

BMP Inspection Data Form

BMP-36

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-36, Infiltration BMP

Created	2021-04-01 15:01:40 UTC by EPField 01
Updated	2021-04-16 13:49:10 UTC by EPField 01
Location	42.1034659748, -71.081111283
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	09:57
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-36
Location	Located on the northeast corner of the intersection of Chase Run and Sumner Street; Across the road from #7 Chase Run.
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	14 Chase Run Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significantly overgrown. Not been maintained in a long time
Corrective Action Needed	Mow/Rake/Prune

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash and leaves
Corrective Action Needed	Remove Trash/Debris

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant
Corrective Action Needed	Remove Sediment

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	One of the two outlets is significantly overgrown
Corrective Action Needed	Remove vegetation

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Possibly infiltration BMP - needs verification; BMP has not been maintained in a while; no inlet or underdrain observed
Photos	

BMP Inspection Data Form

BMP-37

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-37, Treatment BMP

Created	2021-04-01 15:01:41 UTC by EPField 01
Updated	2021-04-16 13:48:48 UTC by EPField 01
Location	42.101274543, -71.0796375945
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	10:54
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-37
Location	Located directly behind #16 Dennison Court, in the woods.
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	16 Dennison Ct Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Vines, cattails
Corrective Action Needed	Remove Species

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Dead vegetation and overgrowth
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	BMP is bisected by cross-culvert. Some sedimentation observed. Stone riprap overflow behind outlet control structure has sedimentation
Photos	

BMP Inspection Data Form

BMP-39

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-39, Conveyance BMP

Created	2021-04-01 15:01:41 UTC by EPField 01
Updated	2021-04-16 13:48:24 UTC by EPField 01
Location	42.1003170517, -71.0779659078
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	11:24
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-39
Location	Located between #9, and #13 Fords Run in the tree line.
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	13 Fords Run Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Dead vegetation and overgrowth
Corrective Action Needed	Remove

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Sediment and leaves at base of swale should be removed

Photos

BMP Inspection Data Form

BMP-41

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-41, Other BMP

Created	2021-04-01 15:01:41 UTC by EPField 01
Updated	2021-04-16 13:48:07 UTC by EPField 01
Location	42.079543104, -71.1382839649
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	13:48
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-41
Location	Located about 300 feet down Turnstone Terrace, on the right (south) side of the road, about 55 feet from the edge, in the tree-line.
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
Address	33 Turnstone Terr Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trees and dead vegetation
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Half full of sediment
Corrective Action Needed	Clean out

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Cracking

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Lots of woods, vegetation, trash, silt, trees. Area needs clearing. Outlet and outlet control structure need clearing
Photos	

BMP Inspection Data Form

BMP-64

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-64, Conveyance BMP

Created	2021-04-08 14:28:51 UTC by EPField 01
Updated	2021-04-16 13:47:19 UTC by EPField 01
Location	42.1044914488, -71.079672128
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	10:28
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-64
Location	Located in the woods behind #30 Chase Run.
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	30 Chase Run Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Significant Vines and Vegetation

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant vegetation especially at outlet
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Significant

Trash/Debris

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Leaves

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Along base of channel
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Overgrown
Corrective Action Needed	Remove excess vegetation

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Swale is significantly overgrown Add swale to GIS
Photos	

BMP Inspection Data Form

BMP-65

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-65, Structural Pretreatment BMP

Created	2021-04-13 21:24:12 UTC by EPField 01
Updated	2021-04-16 13:46:46 UTC by EPField 01
Location	42.128665, -71.111234
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-13
Time	17:22
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-65
Location	Located on the west side of the parking lot next to the soccer fields of Stoughton High School.
BMP Category	Structural Pretreatment BMP
BMP Type - Structural Pretreatment	Proprietary Separator
Address	1600 Pennsylvania Ave Stoughton, MA
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

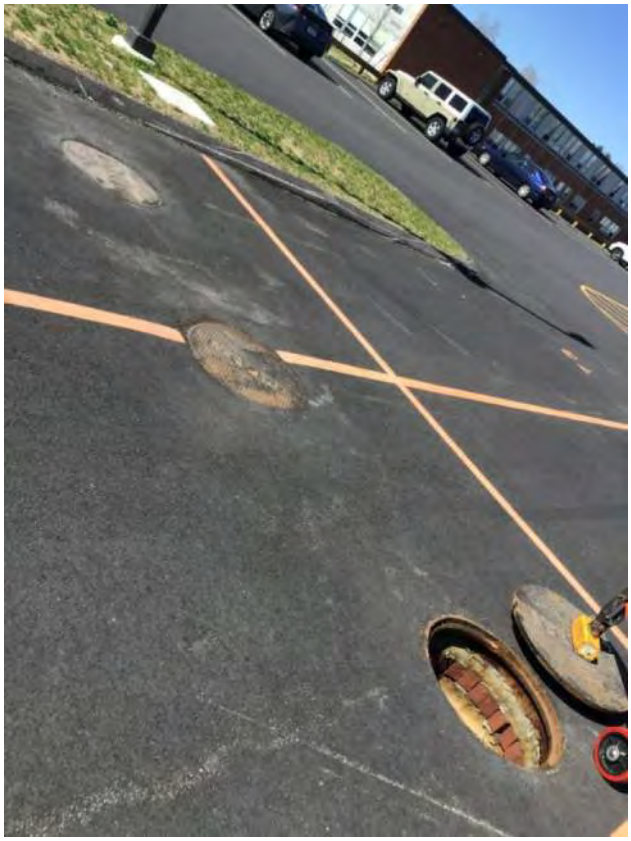
Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Separator type unclear. Appears to be functioning

ENVIRONMENTAL PARTNERS

Photos



BMP Inspection Data Form

BMP-67

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-67, Treatment BMP

Created	2021-04-08 15:32:17 UTC by EPField 01
Updated	2021-04-16 13:45:36 UTC by EPField 01
Location	42.1001178213, -71.0781935603
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	11:32
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-67
Location	Located in between #9, and #13 Fords Run, about 125 feet back into the woods.
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	13 Fords Run Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant overgrowth
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Some

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Outlet control structure has some clogging
Corrective Action Needed	Unclog, remove vegetation

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Riprap overflow from outlet control structure has sediment and leaves; entire area is overgrown
Photos	

BMP Inspection Data Form

BMP-68

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-68, Conveyance BMP

Created	2021-04-08 14:50:29 UTC by EPField 01
Updated	2021-04-16 13:45:21 UTC by EPField 01
Location	42.1012586402, -71.0792484228
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	10:50
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-68
Location	Located in front of #16 Dennison Way, near the southeast corner of the house.
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	16 Dennison Ct Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Vines

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Trash and leaves

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant sediment and leaves
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	In middle of swale
Corrective Action Needed	Regrade

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Stormwater appears to still be conveyed to wet basin; swale is functioning. Some trash visible.
Photos	

BMP Inspection Data Form

BMP-69

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-69, Treatment BMP

Created	2021-04-08 14:21:09 UTC by EPField 01
Updated	2021-04-16 13:45:01 UTC by EPField 01
Location	42.1045062924, -71.0793782585
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	10:21
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-69
Location	Located between #24, and #16 Penniman Circle, about 100ft back into the woods.
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
BMP Type - Other	Dry Detention Basin
Address	16 Penniman Cir Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Cattails
Corrective Action Needed	Remove Species

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash, leaves
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Significant overgrowth, dead vegetation, and invasive species; leaves and silt observed around outlet control structure. Standing water observed; unsure if that's intended - need to verify with site plans
Photos	

BMP Inspection Data Form

BMP-70

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-70, Conveyance BMP

Created	2021-04-08 12:47:31 UTC by EPField 01
Updated	2021-04-16 13:44:40 UTC by EPField 01
Location	42.1395390435, -71.076848181
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	08:47
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-70
Location	Located about 20 feet down the road from the entrance of Old Maple Street.
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	187–199 Old Maple St Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Vines, cat tails

Soil Erosion

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Evidence of scour

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Dead Vegetation

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Significant amount on sides of swale

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash
Corrective Action Needed	Remove Trash/Debris

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excessive silt and debris
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Erosion on side

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Grade goes up
Corrective Action Needed	Re-grade
Notes	Add culvert and fix other gis Overgrown with vegetation (dead and alive) Bottom of the swale is uneven and needs to be re-graded Evidence of scouring Sides of swale have been eroded Trash present Significant silt and other debris along bottom
Photos	

BMP Inspection Data Form

BMP-71

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-71, Treatment BMP

Created	2021-04-08 13:20:30 UTC by EPField 01
Updated	2021-04-16 13:44:26 UTC by EPField 01
Location	42.1430800204, -71.0769749154
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	09:20
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-71
Location	In the fenced in area to the east of a small parking lot off of Pleasant St.
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	988–1098 Pleasant St Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Cattails
Corrective Action Needed	Remove Species

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Overgrown
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	In and around basin

Trash/Debris

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Some

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No

BMP Issue Location/Amount	Significant
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	3 total outlets. 1 cracked, 1 needs regrading, 1 overgrown
Corrective Action Needed	Repair / replace

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Clogging at inlets
Corrective Action Needed	Need to remove sediment

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Sedimentation; outlets need repair; fence was open at time of inspection; outlet control structure had vegetation, likely clogging; structure may be DOT owned
Photos	

BMP Inspection Data Form

BMP-72

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-72, Treatment BMP

Created	2021-04-01 15:01:41 UTC by EPField 01
Updated	2021-04-16 13:44:03 UTC by EPField 01
Location	42.0997070485, -71.0759542659
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	11:48
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-72
Location	In the woods about 450 feet southeast from Fords Run.
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	Stoughton, MA 02072
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Outfall overgrown, trees grown up
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Leaf litter, dead vegetation, overgrowth
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Oil sheen covering a significant portion of the water
Corrective Action Needed	Investigate

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Confirm BMP type; determine if standing water is intended. Outlet control structure unable to be fully inspected due to vegetation. Riprap at outlet overflow has sedimentation and leaves. Some sedimentation observed
Photos	

BMP Inspection Data Form

BMP-73

ENVIRONMENTAL PARTNERS

Town of Stoughton, BMP-73, Infiltration BMP

Created	2021-04-01 15:01:40 UTC by EPField 01
Updated	2021-04-16 13:43:30 UTC by EPField 01
Location	42.1292452951, -71.1098216883
Status	Inspection Complete
Client	Town of Stoughton
Date	2021-04-08
Time	15:20
Weather	Clear
Inspector	Scott Turner

General Information

BMP ID	BMP-73
Location	Northwest corner of Stoughton High School.
BMP Category	Infiltration BMP
BMP Type - Infiltration	Subsurface Structure
Address	232 Pearl Street Stoughton, Massachusetts 02072
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	Yes

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Minimal sediment in manholes (2) inspected. One manhole has weir.
Photos	

APPENDIX P

Year 4 MCM-5 Memos

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: June 27, 2022

To Marc Tisdelle, PE, Executive Director of Development Services/Town Engineer

From Scott Turner, PE, AICP, LEED AP ND, Environmental Partners

Subject: **Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit Impervious Surface Memorandum**

Introduction

This memorandum is regarding Section 2.3.6.b of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit. This section requires permittees to "develop a report assessing local current street design and parking lot guidelines that affect the creation of impervious cover." This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options."

Environmental Partners, at the request of the Town of Stoughton, has reviewed Stoughton's existing local regulations that affect the creation of impervious cover. Specifically, Environmental Partners reviewed the following development regulations:

- Chapter 159 Stormwater Management.
- Rules & Regulations for Stormwater Management adopted 2021.
- Town of Stoughton, Massachusetts Zoning By-Law and Map, as amended through December 2, 2020.
- Chapter 191 Wetlands Protection Bylaw
- Town of Stoughton Non-Zoning Wetlands Protection By-Law Regulations, approved July 12, 2012.
- Town of Stoughton Land Subdivision Regulations, Dated February 17, 1999.

Regarding the items listed in Section 2.3.6.b of the MS4 Permit, we have the following comments.

Design guidelines and performance standards that affect the creation of impervious cover in Stoughton are generally included in the Town of Stoughton Zoning By-Law and Map, the Town of Stoughton Land Subdivision Regulations, the Stormwater Management Bylaw, and the Rules and Regulations for Stormwater Management. The Towns Wetlands Bylaw (Chapter 191) and Wetlands Protection By-Law Regulations do not pertain to the creation of impervious surfaces.

Zoning Bylaw

Consistent with most municipalities in Massachusetts, parking standards and requirements are addressed in the Stoughton Zoning Bylaw. Section 6 of the Zoning Bylaw provides design standards for off-street parking. Section 6.1.3 allows for the use of compact parking spaces for up to 30% of all parking spaces. Section 6.1.4 allows for shared parking facilities between adjacent uses that ultimately reduces the amount of parking spaces and therefore impervious surfaces. Section 8.4 of the Bylaw is regarding Planned Business Developments. Section 8.4.2.6 allows for a reduction in total parking spaces up to 10%, which can result in less parking and less impervious surface. Section 9.3.16.1 allows for shared parking in the Stoughton Center Mixed Overlay District. Section 9.3.16.2 allows for off-site motor vehicle parking in this District if it is located within 500 feet of the site boundary.

These sections of the Zoning Bylaw give applicants, and the Planning Board, the flexibility to provide parking spaces based on the individual use and reduce parking spaces when needed form the outlined provisional standards. This approach can result in the reduction of impervious surfaces, resulting in a reduction of stormwater impacts. This is a forward looking approach to parking lot design that is being adopted by some – but not all – Planning Boards in Massachusetts.

Section 6.1.6 of the Bylaw includes a table of off-street parking regulations by use. This table include parking minimums which often result in the construction of more parking spaces – and impervious surfaces – than are necessary. Many Towns are revising their parking requirements to allow applicants to provide the amount of parking that is necessary, preventing unnecessary parking spaces from being constructed.

Sections 6.4.5, 6.4.6, and 6.4.7 provide standards for providing landscaping. Section 6.4.7 requires parking lots with 40 or more spaces to have 15% of the parking lot area landscaped. This is a Green Infrastructure strategy. Some municipalities have adopted standards that allow stormwater to flow into landscaped areas and use these areas as stormwater management facilities.

In general, the Stoughton Zoning Bylaw provides the Planning Board some limited flexibility to grant waivers from the parking standards described in Section 6.1.6 by land use. This flexibility allows the Planning Board to allow applicants for new developments to right size parking, resulting in the minimum number of parking spaces to support each individual use. There are also provisions in the Zoning Bylaw to allow for shared parking and consider off-street parking which can help reduce the amount of impervious surface and stormwater runoff generated by a project.

Subdivision Regulations

The Stoughton Land Subdivision Regulations are dated February 17, 1999, which is after the initial promulgation of the Massachusetts Stormwater Management Standards but prior to the revised Standards that were issued in 2008. At that time, stormwater management still consisted primarily of collect and convey systems with little stormwater treatment or infiltration as designers and regulatory boards were adapting to the execution and enforcement of these new Standards. Planning trends, such as reducing impervious surfaces for purposes of reducing stormwater runoff

or pervious pavement, were generally not considered. The following sections of the Subdivision Regulations pertain to impervious surfaces:

Section VI. A. 2. Table 1 lists Cross Sectional Design Standards for streets. This table shows a pavement width of 44 feet for collector streets and 30 feet for minor streets. These street widths are very wide and we recommend the Town consider reducing pavement widths to reduce impervious surface and therefore stormwater impacts.

The Regulations do not allow for landscaped islands within cul-de-sacs. Appendix A – Stoughton Standard Details, Road Cross Sections includes a cul-de-sac detail. This detail does not include a planted island within the center, which is allowed in some – but not all – municipalities. Adding – or requiring – a landscape island, will reduce impervious surface.

There are generally no references within the Subdivision Regulations to pervious pavements. All references are to standard bituminous concrete pavement. Section VI. J. 2 describes the use of bituminous concrete sidewalks in subdivisions and does not mention porous or pervious pavements.

Section 360-31 B of the Subdivision Regulations provides widths for travelled ways. This section requires paved roadway widths for Type A (residential) subdivisions to be between 24 and 32 feet. Type B (business or industrial) subdivisions requires paved roadway widths to be between 28 and 36 feet wide.

In our opinion, the required street widths described in the Subdivision Regulations, are wider than needed for residential developments. If designed for vehicular traffic only, residential subdivisions pavement widths could be reduced from 30 feet wide to 24 feet. This width is consistent with Subdivision Regulations in other municipalities. For example, the Devens Enterprise Commission Design Standards by Street/Road Classification calls for a travel lane width of 9 feet with a 1 foot wide shoulder for local streets with a design speed of 30 miles per hour. This road width is derived from the MassDOT Project Development and Design Guide published in 2006. The Town of Hingham Planning Board Rules and Regulations include a minor road width of 22 feet and a limited residential road width of 18 feet. Reducing the pavement widths would reduce the amount of impervious surface and stormwater generation. When bicycle lanes are incorporated in road designs, additional width (possibly 4-6 feet) could be added to the roadway layout. Industrial roads are typically wider than residential roads to accommodate higher volumes of traffic and larger vehicles. The Stoughton Subdivision Regulations include a width for an industrial road of 44 feet. In our opinion, this width is generally consistent with other municipality's regulations for business or industrial roads. For example, the Town of Hingham, which defines a major street as the principal access to a business or industrial subdivision, has a width of 40 feet. We recommend the Town study reducing the pavement widths for industrial subdivision roads.

The Stoughton Subdivision Regulations could also be revised to include pervious pavements for sidewalks. Pervious pavement is not as durable as traditional pavement and in our opinion is not appropriate for travelled ways. However, including pervious pavements for sidewalks will reduce stormwater impacts when compared to traditional pavements.

Stormwater Management Bylaw

Chapter 159 of the Town Bylaws pertains to Stormwater Management. This Bylaw was recently passed by the Town of Stoughton. This Bylaw applies to all land development projects that disturb one acre or more. This threshold includes site development projects as well as subdivisions that include clearing one acre of land that drain to a municipal storm sewer system.

Other than the Definitions Sections, which describes Impervious Surface, there is no direct mention of Impervious Surface within the Bylaw.

Stormwater Management Regulations

The Stormwater Management Regulations were passed on October 19, 2021. Direct references to impervious cover are in the Definitions section as well as Sec 6 I) 2 m) Permit Procedures and Requirements which requires all applicants to show all proposed areas impervious cover as part of the impervious cover requirements. Section 7.0 B) regarding Additional Design Criteria requires Low Impact Design site planning strategies be used to the maximum extent practicable including "reducing or minimizing impervious surfaces, incorporating stormwater management facilities into landscape islands, bioretention basins, grass and surface swales, infiltrative basins and chambers, pervious pavers, etc." This section also requires the applicant justify why LID facilities cannot be incorporated into site designs if these strategies are not used.

Section 7.0 B) 4. requires any roadway widenings that increase the amount of impervious area on a redevelopment site to meet the LID site design criteria described n the regulations.

Conclusions

Section 2.3.6.b of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit requires permittees to "develop a report assessing local current street design and parking lot guidelines that affect the creation of impervious cover. This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options." In our opinion, the Zoning Bylaw and Stormwater Management Bylaw are generally consistent with regard to limiting impervious surfaces. The Zoning Bylaw provides flexibility to limit the number of parking spaces and therefore, the amount of impervious surfaces. It also allows for relief from the parking requirements based on shared parking or on-street parking. The Stormwater Management Regulations encourages the use of Low Impact Development approaches, including the use of pervious pavers and minimizing new impervious surface to increase on-site infiltration and reduce off-site stormwater impacts.

The Stoughton Subdivision Regulations were last amended a few years after the adoption of the Massachusetts Stormwater Management Standards. The Subdivision Regulations generally require traditional collect and convey stormwater management strategies and include generous street widths for all new subdivisions. We recommend the Subdivision Regulations be reviewed and amended to include narrower street widths for residential and industrial streets. Most – if not all –

Definitive Subdivisions would require the clearing of one acre of land and therefore meet the threshold for requiring a Stormwater Permit. Through the Stormwater Permit process, we would expect the implementation of Low Impact Development strategies, including reduction of impervious surfaces or implementation of pervious pavement strategies.

We recommend that pervious pavement strategies be used for all sidewalks, including definitive subdivisions, site developments, and complete streets strategies consistent with the strategies described in the Stormwater Management Bylaw.

For clarity, both the development sections of the Zoning Bylaw and Subdivision Regulations should be amended to refer to the design standards of the Stormwater Management Bylaw, ensuring the strategies described in the Bylaw are incorporated into the proposed designs.

Please call if you have any questions regarding these items.

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: June 27, 2022

To Marc Tisdelle, PE, Executive Director of Development Services/Town Engineer

From Scott Turner, PE, AICP, LEED AP ND

Subject: **Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit Green Infrastructure Memorandum**

Introduction

This memorandum is regarding Section 2.3.6.c of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit. This section requires permittees to "develop a report assessing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist:

i. Green roofs;
ii. Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
iii. Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.

The assessment should indicate if the practices are allowed in the MS4 jurisdiction and under what circumstances are they allowed. If the practices are not allowed, the permittee shall determine what hinders the use of these practices, what changes in local regulations may be made to make them allowable, and provide a schedule for implementation of recommendations. The permittee shall implement all recommendations, in accordance with the schedules, contained in the assessment.

Environmental Partners, at the request of the Town of Stoughton, has reviewed Stoughton's existing local regulations and performed and assessment regarding the viability for implementing or allowing the above described Green Infrastructure practices. Specifically, Environmental Partners reviewed the following development regulations:

- Chapter 159 Stormwater Management.
- Rules & Regulations for Stormwater Management adopted 2021.
- Town of Stoughton, Massachusetts Zoning By-Law and Map, as amended through December 2, 2020.
- Chapter 191 Wetlands Protection Bylaw
- Town of Stoughton Non-Zoning Wetlands Protection By-Law Regulations, approved July 12, 2012.
- Town of Stoughton Land Subdivision Regulations, Dated February 17, 1999.
- Chapter 163 Stretch Energy Code.

Recently, the Town of Stoughton passed a revision to the Stoughton Stormwater Management Bylaw and Regulations that encourages the use of Low Impact Development/Green Infrastructure strategies consistent with the requirements of the Massachusetts Small MS4 Permit.

Regarding the items listed in Section 2.3.6.c of the MS4 Permit, we have the following comments.

Green Roofs

Although green roofs serve a stormwater management function, their design and construction is typically regulated under State and local building codes. Chapter 163 of Stoughton's Bylaws regarding Building Construction pertains specifically to the Stretch Energy Code. The Stretch Energy Code has been adopted by many states and local municipalities to require and encourage greater energy efficiency. Chapter 163 of Stoughton's Bylaws do not include discussion regarding green roofs. Chapter 159, regarding Stormwater Management, does not include specific language pertaining to the implementation of green roofs. Section 7 B) 1. of the Stormwater Regulations lists a number of Low Impact Development Strategies and describes the implementation of various stormwater management measures to satisfy the requirements of the Stormwater Management Bylaw. This section lists various stormwater management measures including reducing or minimizing impervious surfaces, incorporating stormwater management facilities into landscape islands, bioretention basins, grass and surface swales, infiltrative basins and chambers and pervious pavers. It does not specifically mention Green Roofs.

Additional requirements or promotion of Green Roofs in Stoughton would likely include an additional bylaw or regulation specific to Green Roofs. In addition, requirements for the use of Green Roofs as a stormwater management practice would most likely require additional more specific language regarding Green Roofs in the Stoughton Stormwater Management Bylaw and/or Regulations. Due to the complex nature of constructing Green Roofs, including impacts to the design of building structural and rooftop elements, specific guidance would need to be developed for the design, construction, and maintenance of these structures.

Infiltration Practices

The Stoughton Bylaws and Regulations require and/or encourage the use of infiltrative practices in many different Regulations and Bylaws. Section 159-8 (10) (b) [6] of the Bylaw requires projects to

maximize groundwater recharge, which is a Green Infrastructure infiltration strategy. Section 159-9 (2) (a) [3] of the Bylaw requires minimizing loss of annual recharge from the site, which effectively translates into providing additional infiltration.

The Regulations include a number of references to infiltration practices. Section 2 – Definitions, describes "INFILTRATION: The act of conveying surface water into the ground to permit groundwater RECHARGE and the reduction of stormwater RUNOFF from a project SITE." Section 7 B) 1 requires Low Impact Development Strategies to be used to the maximum extent practicable including infiltrative basins and chambers and pervious pavers, which are all infiltrative practices. Section 7 B) 3. a), Additional Design Criteria, requires new development projects retain the volume of stormwater equivalent to one-inch multiplied by total impervious area. This requirement can be met through stormwater harvesting, but is much easier accomplished through collection and infiltration, provided soil conditions are suitable for infiltration. Section 7 B) 3. b), Additional Design Criteria, requires re-development projects retain the volume of stormwater equivalent to .8-inch multiplied by total impervious area. Similar to Section 7 B) 3. a), this requirement for redevelopment projects is most easily accomplished through infiltrative practices, provided soil conditions are suitable of infiltration.

The Stoughton Zoning Bylaw is limited with regard to referring to infiltrative stormwater management practices. Section 10.6.11 describes requirements for the preparation of a Stormwater Management Report as part of the Site Plan approval process. This section of the Zoning Bylaw refers to meeting the requirements of the MS4 permit. Section 10.6.11.11 states that site runoff shall be infiltrated to the maximum extent practicable and also describes that Low Impact Development Strategies are encouraged.

The Stoughton Land Subdivision Regulations have limited references to infiltrative practices. This section primarily contains references to traditional closed drainage systems. There are references throughout the Regulations to drainage design. All of these references imply the construction of closed drainage systems as follows:

Section IV. C. 2. b. 14. (8) requires that all definitive subdivision plans show proposed road plan and profiles including stormwater drains, catch basins, and manholes. This implies a traditional closed drainage system.

Section IV. C. 2. b. 14. (8) requires that all definitive subdivision plans show plan and profiles with rim and invert elevations of all manholes and catch basins. This implies a traditional closed drainage system is expected.

Section IV. C. 2. b. 17. requires that all definitive subdivision plans show size and materials of all proposed and existing drain pipes, catch basins, manholes, and outlets. This implies a traditional closed drainage system is expected.

Section IV. C. 2. b. 31. Provides guidance regarding the development of a drainage plan. This section references the inclusion of traditional closed drainage structures including inlets, pipes, drains, culverts, manholes, and headwalls. This implies a traditional closed drainage system is expected.

Section V. C. 2. n. 8. requires all definitive subdivision plans to include, on the plan and profile sheets, the size, locations, and slopes of stormwater drains, catch basins, and manholes. This implies the installation of a closed drainage system.

Section VI. C. 1. is regarding drainage and runoff control. This section describes drainage and runoff control structures as catch basins, manholes, piping, detention ponds, headwalls, endwalls, rip-rap, emergency spillways, etc. which are all traditional closed drainage structures. There is no description or reference to infiltrative practices, low impact development or green infrastructure strategies.

Section VI. C. 2.c describes drainage systems as gutters, inlets, culverts, catch basins, manholes, subsurface piping, surface channels, natural waterways, and open detention basins. These are all traditional closed stormwater design strategies. This section does not refer to infiltrative practices, low impact development or green infrastructure strategies.

Appendix A – Stoughton Standard Details, Road Cross Sections include traditional closed drainage details. The typical road cross section shows traditional storm pipe located beneath the road and does not include infiltrative practices.

Appendix B – Stoughton Standard Details, Drain include standard details for drain manholes, frames and covers, catch basins, frames and grates, drain trench detail, headwall, endwall, and rip-rap detail. These are all traditional grey infrastructure details and do not include any green infrastructure or infiltrative drainage details.

The Stormwater Management Regulations requires the use of infiltrative practices. Although the Subdivision Regulations generally describe the use of traditional closed drainage systems rather than Low Impact Development stormwater management systems, Definitive Subdivisions – provided they disturb greater than one acre of land – are required to obtain a Stormwater Management Permit and presumably comply with the requirements of the Stormwater Management Bylaw, including the use of Low Impact Development stormwater management strategies.

For clarity, we recommend the Land Subdivision Regulations be revised to include the infiltration practices required by the Stormwater Management Bylaw and Regulations. Designers will always review the Definitive Subdivision Regulations but may not always review the Stormwater Management Bylaw. We recommend the Land Subdivision Regulations be revised to more clearly require Low Impact Development stormwater management practices including the infiltration practices described by Section 2.3.6.c of the MS4 Permit or – at a minimum – require that all stormwater designs comply with the requirements outlined in the Stormwater Management Bylaw and Regulations.

Rainwater Harvesting

Rainwater harvesting is the collection, storage, and eventual reuse of rainwater for use as irrigation or industrial process water. Rainwater reuse systems can be used on small scales, such as collecting water from residential home downspouts, or on a much larger scale including collecting water from

large industrial buildings. Rainwater harvesting and reuse is not specifically identified in any of the Town of Stoughton's Land Development Regulations.

We did not see any additional specific references to rainwater harvesting or reuse in other areas of the Stormwater Management Bylaw or Regulations, the Zoning Bylaw, or Land Subdivision Regulations. Since all large site developments and definitive subdivisions that include over an acre of land disturbance require a stormwater management permit, they are required to comply with the requirements of the Stormwater Management Bylaw.

Conclusions

Section 2.3.6.c of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit requires permittees to "develop a report assessing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist:

- Green roofs;
- Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
- Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.

The Stoughton Stormwater Management Bylaw, encourages the use of low impact development and green infrastructure practices for all projects that involve the clearing of one acre of land and require a Stormwater Management Permit. The Zoning Bylaw has some general references to stormwater management in select areas throughout the bylaw, but nothing very specific. The Land Subdivision Regulations generally reference traditional closed drainage systems that were standard engineering practice prior to the adoption of the Massachusetts Stormwater Management Standards. The Land Subdivision Regulations do not specifically reference the stormwater management practices described in this Section of the MS4 permit. The Stoughton Wetlands Protection Bylaw and the Town of Stoughton Non-Zoning Wetlands Protection By-Law Regulations do not have specific references to stormwater management or Low Impact Development stormwater management practices. In our opinion, the stormwater management practices described in the Stormwater Management Bylaw are consistent with the requirements of the MS4 permit. We a recommend the Zoning Bylaw be revised to include additional language that reference the Stormwater Management Bylaw and the design criteria within the Stormwater Management Bylaw specifically. Additional language could be included to require Low Impact Development Stormwater Management Standards and the specific best management practices described in the MS4 permit.

The Town of Stoughton Land Subdivision Regulations were adopted over 20 years ago in 1999. Stormwater management approaches and design standards have changed considerably. At a minimum, these Regulations should refer to the Stoughton Stormwater Management Bylaw regarding the design of stormwater management systems. Specifically Section IV C refers to design

criteria for each subdivision's drainage system. We recommend this section be revised to include Low Impact Development strategies, consistent with the requirements of the MS4 permit, and the Stoughton Stormwater Management Bylaw. The way the current Regulations are written, the standard – or by-right – approach to stormwater management includes traditional closed drainage systems. We recommend this section be revised to include the practices described in the MS4 Permit above.

Please call if you have any questions regarding these items.

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MEMORANDUM

Date: August 9, 2022

To Marc Tisdelle, P.E. – Town Engineer, Town of Stoughton

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

CC Paul Giffune – DPW Superintendent, Town of Stoughton
Larry Langlois – GIS Manager/Stormwater Coordinator, Town of Stoughton
Craig Horsfall, P.E. – Assistant Town Engineer, Town of Stoughton

Subject Minimum Control Measure No. 5 BMP Retrofit Analysis and Priority Municipal Properties

This memorandum summarizes the work completed by Environmental Partners Group, LLC (Environmental Partners) for the Town of Stoughton, MA in accordance with Task 3c of the Agreement for Professional Engineering Services – Municipal Separate Storm Sewer System (MS4) General Permit Assistance for the Town of Stoughton.

In accordance with MS4 General Permit section 2.3.6.d, the Town of Stoughton is required to develop an inventory of Town-owned properties that could be modified or retrofitted with constructed stormwater best management practices (BMPs). Beginning with the MS4 Year 4 annual report, the Town will need to maintain an inventory of five (5) permittee-owned properties that are candidates for BMP retrofits. The Town will also need to provide a status update of any progress made on all properties that have been modified or retrofitted with BMPs to mitigate impervious cover for each subsequent report submittal. In this memorandum, Environmental Partners evaluated all Town-owned properties and developed the initial inventory of five permittee-owned properties identified for BMP retrofit opportunities.

IDENTIFICATION OF POTENTIAL BMP LOCATIONS

Section 2.3.6.d of the MS4 Permit requires that permittees identify a minimum of five (5) permittee-owned properties that could potentially be modified of retrofitted with BMPs designed to reduce the frequency, volume, and pollutant loads of stormwater discharges to and from its MS4. The permit

requires that permittees consider properties with significant impervious cover as well as access to maintenance, subsurface geology, depth to water table, proximity to aquifers, and subsurface infrastructure.

The Town of Stoughton maintains the municipal properties inventoried in Table 1, below. This inventory excludes municipal property that lacks any impervious surface, such as conservation land or vacant lots.

Table 1: Inventory of Town-owned Properties

Facility Name	Address
Ames Long Pond	1000 Highland Street
Ash Street Water Storage Tank	Ash Street
Community Field/STOYAC Football field & Parking Lot	Parkway off Washington Street
Dawe Elementary School	131 Pine Street
Animal Control Office	499 West Street
Cedar Hill Golf Course	1137 Park Street
DPW Garage	950 Central Street
Fire Station	30 Freeman Street
Fire Department	1550 Central Street
Forest Water Storage Tank	Forest Road
Gibbons Elementary School & Fields	232 Pearl Street
Halloran Park	Pierce Street
Hansen Elementary School	1800 Central Street
High School & Fields	232 Pearl Street
Jones Early Childhood Center	137 Walnut Street
Little Theater of Stoughton	951 Pleasant Street
Manfred Kolz Soccer Fields	501 West Street
MBTA Stoughton Commuter Rail Train Station	45 Wyman Street
Memorial Park	Walnut Avenue
Michael Sammarco Babe Ruth Memorial Field	89 Drake Avenue
Middle School & Fields	211 Cushing Street
Muddy Pond Water Treatment Plant	Bay Road
Oakland Street Water Storage Tank	Oakland and Pleasant Street
Parking Lot	Freeman Street and Washington Street
Parking Lot	Pleasant Street & Turnpike Street
Parking Lot	Train Station Parking
Parking Lot	Railroad Ave
Parking Lot	Rose Street
Pearl Street Cemetery	Pearl Street

Plain Street Water Treatment Plant	Plain Street
Pleasant Street Water Storage Tank	Pleasant Street
Police Station	26 Rose Street
Pratts Court Water Treatment Plant	221 Pratts Court
Public Library	84 Park Street
Recreation Department	15 Pleasant Street
South Elementary School & Fields	171 Ash Street
Stoughton Historical Society	6 Park Street
Town Hall	10 Pearl Street
VFW Memorial Field	West Street
Water Department	940 Central Street
West Elementary School, Fields & Deborah L. Levitz Playground	1322 Central Street
Youth Commission/ Council on Aging	110 Rockland Street

RANKING OF POTENTIAL BMP LOCATIONS

Environmental Partners performed a high level analysis of the facilities listed above. This analysis included site visits to all of the facilities to observe site conditions and occurrence of any stormwater management systems or facilities. EP also used the Natural Resources Conservation Service (NRCS) Soil Survey data to assess soil conditions at each facility in order to understand if the soils are appropriate for the installation of stormwater best management practices. Specifically, EP reviewed the mapped soil consistency, hydrologic soil group, and estimated seasonal high groundwater depth. EP reviewed online Geographic Information System (GIS) data layers stored on the Town of Stoughton GIS system as well as MassGIS. Specifically, EP reviewed whether each site was located within a regulated area, such as a Zone I or Zone II Area of a public drinking water supply or a wellhead protection area. EP reviewed the amount of impervious surface on site, including the number of parking spaces, to understand the amount of vehicle trips that may be generated by each site. EP also compared each location based on the Town of Stoughton catchment rankings determined as part of the development of the IDDE Plan last updated in June 2022. Land use, and the intensity of development and potential to generate pollutants was also considered.

In accordance with Appendix H Part I.1.a.i.2, the Town must also include consideration of BMPs to reduce nitrogen discharges, due to the Taunton River Watershed's nitrogen impairment. Nitrogen export calculations for each outfall-catchment was completed in the Town's Nitrogen Source Identification Report (NSIR), developed by the Neponset Stormwater Partnership and then evaluated by EP. That report studies outfall-catchments within the Taunton River Watershed for siting BMP retrofits, whereas this report looks at municipal properties throughout the Town. Therefore the findings from the NSIR and this analysis will be largely different and complementary.

EP prepared a ranking matrix incorporating the factors described above. In general, EP found that approximately 20 percent of the facilities listed in Table 1 contained existing stormwater management BMPs. Only one facility (Long Ames Pond beach and swimming area) was found to discharge directly into an impaired waterbody: Long Ames Pond. Additionally, a quarter of the

facilities were determined to discharge to a water body upstream of an impaired water body, including Steep Hill Brook and Woods Pond. Approximately 30 percent of municipal facilities studied are located within a Public Water Supply Zone I or Zone II. Some properties contain no piped drainage and thus no outfall-catchment priority as determined by the Town's Illicit Discharge Detection and Elimination (IDDE) Program. The majority of facilities with an outfall-catchment ranking were prioritized as high. Soil conditions throughout Town, based on the NRCS Soil Survey, generally are mixed between hydrologic groups A, B, C, D, and unknown soils. The center of Town contains primarily Urban Land soils, which indicate that the soil has been disturbed and its infiltrative characteristics are unable to be estimated without infiltration test pits. The majority of facilities have a seasonal high groundwater of greater than 80 inches below ground surface, according to NRCS estimates. Therefore, suitable soils generally exist throughout Town for the installation of stormwater management facilities. Soil infiltrative characteristics and groundwater conditions require further investigation to confirm suitability for stormwater BMPs.

EP evaluated whether a particular property contained a high, medium, or low potential to generate pollutants. In general, the Department of Public Works (DPW) facility was rated high due to the facility's operations, vehicle storage and washing, and presence of stockpiles. EP also rated the High School, Middle School, and Cedar Hill Golf Course as high due to the amount of impervious surface on site including parking spaces and vehicle travel and open space that is maintained, irrigated, fertilized, and chemically treated. Although the High School generates a significant pollutant load, it was recently constructed and contains stormwater best management practices that are fully compliant with State standards. Properties that experience high vehicular traffic such as Town Hall, the elementary schools, and Police Station were ranked as medium due to their high amount of impervious surface and vehicular traffic. Facilities used by the Water Department such as a treatment plant or water storage tank were rated as low given their low vehicular traffic and amount of impervious area. Fields were generally ranked as low due to the low amount of impervious surfaces and high infiltrative capabilities.

EP has had discussions with engineering staff regarding the widths of roads in Stoughton. In general, the Town's roads are wider than roads in surrounding municipalities. In many cases, road widths in numerous locations throughout Town could be reduced to decrease impervious surface and therefore stormwater impacts. Specific locations are too numerous to include in this analysis.

Based on the criteria described above, EP has prioritized the following facilities for the development of stormwater Best Management Practices. The list is ordered from highest to lowest priority for BMP retrofits.

1. DPW Garage,
2. Cedar Hill Golf Course,
3. Jones Early Childhood Center,
4. Dawe Elementary School, and
5. West Elementary School, Fields & Deborah L. Levitz Playground.

Please see the accompanying spreadsheet in Attachment 1 to review the considerations and criteria used to determine this ranking. These locations are also shown in Attachment 2.

Attachments

Attachment 1: Table of Priority Ranking of Municipal Properties for BMP Retrofits

Attachment 2: Figure of All Municipal Properties and Five Priority Properties for BMP Retrofits

Attachment 1: Priority Ranking of Municipal Properties for BMP Retrofits

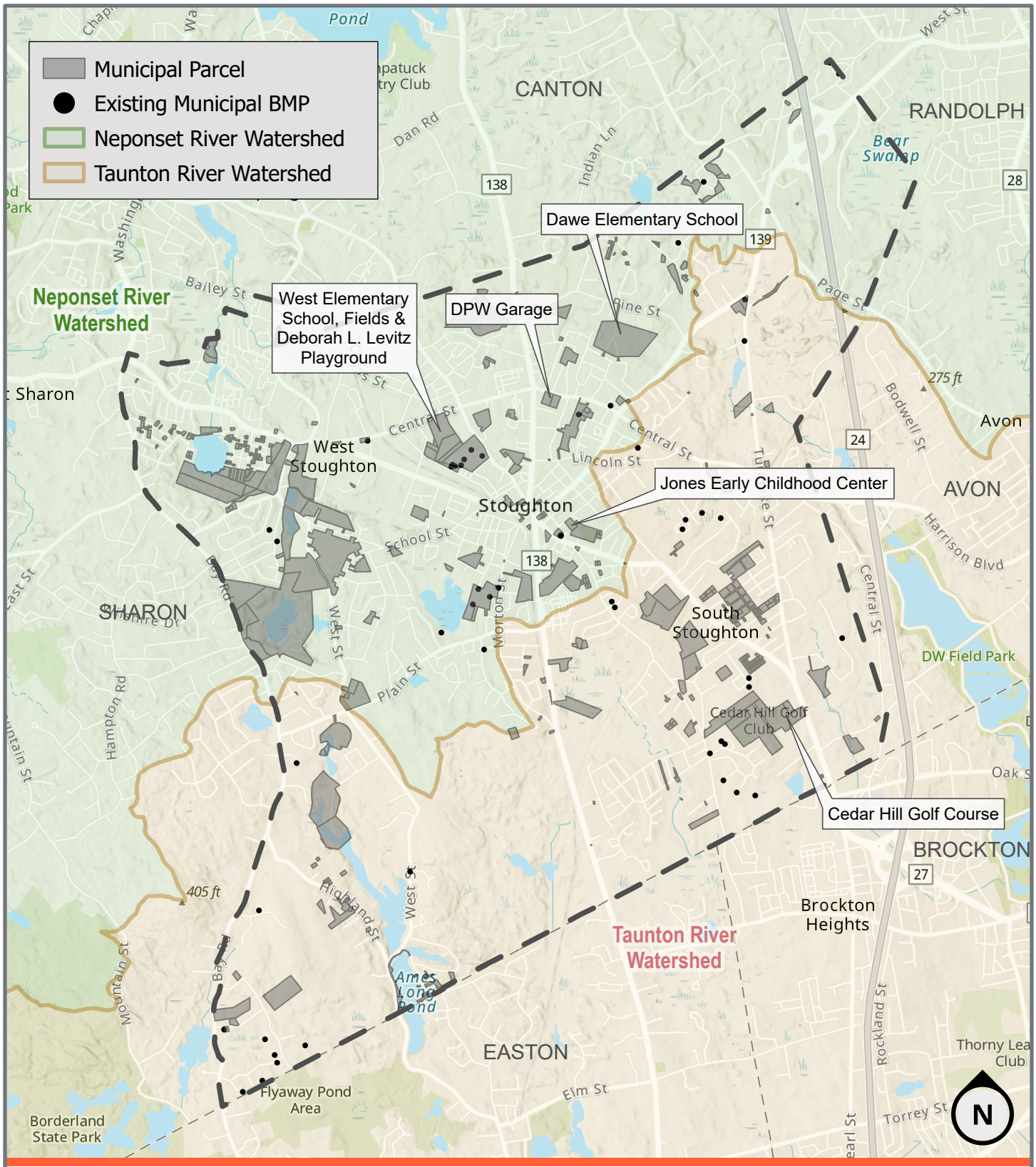
Facility Name	Address	Outfall-catchment priority	Receiving Water	Potential pollutant loading	Subsurface geology	Hydrologic Soil Group	Estimated water table (inches)	Proximity to public water supply zones	Existing stormwater BMPs	Notes
DPW Garage	950 Central Street	High	Unnamed Wetlands	High	Urban land, - Unknown HSG Whitman fine sandy loam, extremely stony - D	Unknown, D	>80	No	No	Stormwater management upgrades are underway High pollutant loading
Cedar Hill Golf Course	1137 Park Street	High	Unnamed Pond	High	Charlton-Hollis-Rock outcrop complex - A Canton fine sandy loam, extremely stony - B Woodbridge fine sandy loam, extremely stony - C/D Ridgebury fine sandy loam, extremely stony - D	A, B, C/D, D	>80, >20	No	No	Large parking lot High vehicular traffic High fertilizer use
Jones Early Childhood Center	137 Walnut Street	High	Unnamed Wetlands	Medium	Merrimac-Urban land complex	A	>80	No	No	High vehicular traffic Significant impervious Area
Dawe Elementary School	131 Pine Street	High	Beaver Meadow Brook (IMPAIRED)	Medium	Udorthents, loamy - A Canton fine sandy loam, extremely bouldery - A Merrimac fine sandy loam, - A Canton fine sandy loam, extremely stony - B Whitman fine sandy loam, extremely stony - C	A, B, C	>80, 0	Partly in Zone II	No	High vehicular traffic Significant impervious Area Discharges directly to impaired waters
West Elementary School, Fields & Deborah L. Levitz Playground	1322 Central Street	High	Unnamed Stream to West Stoughton Pond to Steep Hill Brook (IMPAIRED)	Medium	Merrimac fine sandy loam	A	>80	No	No	Discharges to impaired waters
Hansen Elementary School	1800 Central Street	High	Unnamed Stream to Steep Hill Brook (IMPAIRED)	Medium	Udorthents, loamy	A	>80	Zone II	No	Discharges to impaired waters
South Elementary School & Fields	171 Ash Street	High	Unnamed Stream to Dorchester Brook	Medium	Paxton fine sandy loam, extremely stony	C	>20	No	No	
MBTA Stoughton Commuter Rail Train Station	45 Wyman Street	High	Unnamed Wetlands	Medium	Urban land	Unknown	>80	No	No	
Parking Lot - Rose Street	26 Rose Street	High	Unnamed Stream to Brittons Pond	Medium	Urban land	Unknown	>80	No	No	Located adjacent to Police Department
Parking Lot - Freeman Street	0 Freeman Street	High	Unnamed Stream to Brittons Pond	Medium	Urban land	Unknown	>80	No	No	
Parking Lot - Train Station Lot	Wyman Street	No piped drainage	Unnamed Wetlands	Medium	Urban land	Unknown	>80	No	No	
Parking Lot - Railroad Ave	Railroad Ave	No piped drainage	Unnamed Wetlands	Medium	Urban land	Unknown	>80	No	No	
Town Hall	10 Pearl Street	High	Unnamed Stream to Brittons Pond	Medium	Urban land	Unknown	>80	No	No	
Middle School & Fields	211 Cushing Street	High	Unnamed Stream to West Stoughton Pond to Steep Hill Brook (IMPAIRED)	High	Urban land	Unknown	>80	No	Yes	Not all stormwater is treated via existing BMPs Discharges to impaired waters
Police Station	26 Rose Street	High	Unnamed Stream to Brittons Pond	Medium	Urban land	Unknown	>80	No	No	High vehicular traffic Significant impervious Area
Fire Station	30 Freeman Street	High	Unnamed Wetlands	Medium	Urban land	Unknown	>80	No	No	
Ames Long Pond	1000 Highland Street	High	Ames Long Pond (IMPAIRED)	Low	Udorthents, loamy - A Canton fine sandy loam, extremely bouldery - A	A	>80	No	No	Receives discharge from 2 MS4 Outfalls Discharges directly to impaired waters
Halloran Park	Pierce Street	High	Unnamed Wetlands	Low	Merrimac fine sandy loam - A Merrimac-Urban land complex - A	A	>80	No	No	
Stoughton Historical Society / Pleasant Street Parking Lot	6 Park Street	High	Unnamed Wetlands	Low	Urban land	Unknown	>80	No	No	
Recreation Department	15 Pleasant Street	High	Unnamed Wetlands	Low	Urban land	Unknown	>80	No	No	
Community Field/STOYAC Football field & Parking Lot	Parkway off Washington Street	Low	Unnamed Stream	Low	Udorthents, loamy - A Scarboro and Birdsall soils - A/D	A, A/D	>80, 0	No	No	
Animal Control Office	499 West Street	No piped drainage	Unnamed Stream to West Stoughton Pond to Steep Hill Brook (IMPAIRED)	Low	Sudbury fine sandy loam	B	>27	Zone II	No	Discharges to impaired waters

Attachment 1: Priority Ranking of Municipal Properties for BMP Retrofits

Facility Name	Address	Outfall-catchment priority	Receiving Water	Potential pollutant loading	Subsurface geology	Hydrologic Soil Group	Estimated water table (inches)	Proximity to public water supply zones	Existing stormwater BMPs	Notes
Manfred Kolz Soccer Fields	501 West Street	No piped drainage	Muddy Pond	Low	Udorthents, loamy - A Udorthents, sandy - A Hinckley loamy sand - A	A	>80	Zone II	No	
Michael Sammarco Babe Ruth Memorial Field	89 Drake Avenue	No piped drainage	Unnamed Stream to West Stoughton Pond to Steep Hill Brook (IMPAIRED)	Low	Hinckley loamy sand - A Sudbury fine sandy loam - B	A, B	>80, >27	No	No	Discharges to impaired waters
Memorial Park	Walnut Avenue	High	Unnamed Stream	Low	Merrimac-Urban land complex	A	>80	No	No	
Water Department	940 Central Street	High	Unnamed Stream to Steep Hill Brook	Medium	Udorthents, loamy - A Canton fine sandy loam - B	A, B	>80, 0	Zone II	No	
VFW Memorial Field	West Street	No piped drainage	Town Pond	Low	Merrimac fine sandy loam - A Udorthents, sandy - A Scarboro and Birdsall soils - A/D Walpole sandy loam - B/D Udorthents, wet substratum - Unknown	A, A/D, B/D, Unknown	>80, 0	Zone II	No	
Pratts Court Water Treatment Plant	221 Pratts Court	No piped drainage	Unnamed Stream to Steep Hill Brook	Low	Udorthents, sandy - A Swansea muck - B/D Udorthents, wet substratum - Unknown HSG	A, B/D, Unknown	>80, 0	Zone I	No	
Plain Street Water Treatment Plant	Plain Street	Low	Plain Street Pond	Low	Merrimac fine sandy loam - A Walpole sandy loam - B/D Canton fine sandy loam, extremely stony - B	A, B/D, B	>80, 2	Zone I	No	
Pearl Street Cemetery	Pearl Street	Low	Unnamed Stream	Low	Merrimac-Urban land complex - A Udorthents, loamy - A	A	>80	No	No	
Little Theater of Stoughton	951 Pleasant Street	No piped drainage	Unnamed Stream	Low	Sudbury fine sandy loam - B Scarboro and Birdsall soils - A/D	B, A/D	>27, 0	Zone I	No	Property appears to be abandoned or little used
Pleasant Street Water Storage Tank	Pleasant Street	No piped drainage	Unnamed Wetlands	Low	Montauk fine sandy loam	C	>30	No	No	High point
Ash Street Water Storage Tank	Ash Street	High	Unnamed Stream to Dorchester Brook	Low	Woodbridge fine sandy loam, extremely stony	C/D	>20	No	No	High point
Forest Water Storage Tank	Forest Road	No piped drainage	Unnamed Tributary	Low	Montauk fine sandy loam - C Scituate fine sandy loam - C	C	>27	No	No	High point
Oakland Street Water Storage Tank	Oakland and Pleasant Street	No piped drainage	Unnamed Wetlands	Low	Montauk fine sandy loam	C	>30	No	No	High point
Parking Lot - Pleasant and Turnpike	Pleasant Street & Turnpike Street	High	Unnamed Stream to Beaver Brook	Low	Sudbury fine sandy loam - B Scarboro and Birdsall soils - A/D	B, A/D	>27, 0	Zone II	Yes	
Youth Commission/ Council on Aging	110 Rockland Street	Low	Unnamed Wetlands	Medium	Scituate fine sandy loam, extremely stony	C	>27	No	Yes	
Muddy Pond Water Treatment Plant	Bay Road	No piped drainage	Muddy Pond	Low	Merrimac fine sandy loam - A Merrimac-Urban land complex - A Hinckley loamy sand - A	A	>80	Zone I	Yes	
Public Library	84 Park Street	High	Unnamed Wetlands	Medium	Merrimac-Urban land complex	A	>80	No	Yes	Library newly built and includes LID BMPs
Fire Department	1550 Central Street	Low	Unnamed Wetlands	Medium	Sudbury fine sandy loam	B	>27	No	Yes	
Gibbons Elementary School & Fields	232 Pearl Street	High	Woods Pond (IMPAIRED) and Unnamed stream	Medium	Udorthents, loamy	A	>80	No	Yes	Discharges directly to impaired waters
High School & Fields	232 Pearl Street	High	Unnamed Stream to West Stoughton Pond to Steep Hill Brook (IMPAIRED)	High	Urban land - Unknown HSG Merrimac fine sandy loam - A	Unknown, A	>80	No	Yes	Significant impervious surface, but recent stormwater upgrades are providing adequate stormwater management

Properties are lsited in order of priority for BMP retrofits

Properties located within the Taunton River Watershed are subject to Appendix H of the MS4 Permit and e Nitrogen-reducing requirements



ATTACHMENT 2

All Municipal Properties and Five Priority Properties for BMP Retrofits

Stoughton, MA

0 0.5 1 Miles

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