STORMWATER MANAGEMENT PLAN (SWMP)

Town of Milford

September 2021 (revised)

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	1/2021	O&M Plan, IDDE, SWPPPs, and Facility Inventory are included as Appendix K
2	9/2021	Updated text, figures, and Annual Report, BMP report, and IDDE Appendices

"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 EPA's effort to preserve, protect, and improve the Nation's water resources from polluted stormwater runoff. The Phase II program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites, through the use of NPDES permits, to implement programs and practices to control polluted stormwater runoff. 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 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" (i.e., cities and towns) and "non-traditional" (i.e., 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 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 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 during the permit term. Additionally, MS4 reports (Operation and Maintenance Plan, Illicit Discharge Detection and Elimination Plan, etc.) annual reports, and inspection reports should be attatched to the SWMP as appendices. Thus, the SWMP should act as a living document that records the permitee’s planned and completed progress toward meeting the MS4 Permit requirements.

The main 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 (MassDEP). The Town of Milford and its surrounding water bodies are shown on *Figure 1: System Locus*. The Milford Notice of Intent (NOI) for coverage under the Small MS4 General Permit was submitted to EPA and MassDEP on September 25, 2018. A copy of the NOI is provided in Appendix B.

SECTION 2 SWMP COMPONENTS

SECTION 2.1 PARTIES INVOLVED IN IMPLEMENTATION

Stormwater programs in the Town of Milford are currently a responsibility of the Highway Supervisor, Scott Crisafulli. The Town has not yet created/staffed a dedicated stormwater management position or stormwater committee. However, the current departments involved in stormwater management are listed in the table below.

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

Name	Title	Department
Scott Crisafulli	Highway Supervisor	Highway Department
Michael Dean, P.E.	Town Engineer	Planning & Engineering Department
*Additional Members**		
Larry L. Dunkin, AICP	Town Planner	Planning & Engineering Department
John Mainini	Director of Operations	Sewer Department
		Board of Health
		Conservation Commission

A draft schedule has been developed in effort to comply with the NPDES Permit requirements and timelines as currently established. The draft 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 Milford's eligibility determination of Criterion C with regard to federal Endangered and Threatened Species and Critical Habitat Protection. Criterion C states 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 U.S. Fish and Wildlife Service (USFWS)." 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, Planning, and Consultation System (IPaC System) environmental review process. Using the IPaC System environmental review process, one endangered species is within Milford's boundaries: the Northern Long-Eared Bat. The Northern Long-Eared Bat does not have critical habitats designated within the Town, and the MS4 Permit will not adversely affect the species.

SECTION 2.3 DOCUMENTATION 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 Milford'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 best management practices (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 authorized 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."

Milford 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 5 calendar days of the time you become aware of the overflow, bypass, or backup. Upon notification of any SSO or septic overflow, the Milford Board of Health will take these appropriate measures to comply with Permit requirements.

An inventory of all known locations where SSOs have discharged to the MS4 will be maintained by the Town, 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

interconnection of flow between the systems. An updated 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 in the first year of the Permit term and is attached as Appendix L to the SWMP. The Town continuously updates and maintains the IDDE plan each year of the permit term. The IDDE program is detailed in section 3.3 of Minimum Control Measures. The Town's Stormwater Management and Erosion Control Bylaw and current Illicit Discharge Bylaw was developed and approved in October 2005. They are provided in Appendix H, as Article 36 of the Town bylaws.

SECTION 2.7 SEDIMENT AND EROSION CONTROL PROCEDURES

The Town maintains written procedures for site inspections and enforcement of sediment and erosion control in accordance with part 2.3.5 of the Permit: Construction Site Stormwater Runoff Control. The procedures are detailed in sections 3.4 and 3.5 of Minimum Control Measures below. This information includes the party responsible for site inspections and implementation of procedures.

SECTION 2.8 PUBLIC DRINKING WATER SUPPLY SOURCES PROTECTION

The Town of Milford has numerous public drinking water supply sources. Surface water sources include the Charles River (intake located north of Milford Pond) and Echo Lake (in Hopkinton). The Town also extracts groundwater from the Clark's Island Wells, Dilla Road Wells, and wells along Godfrey Brook. These public water supplies are shown in Figure 3: Town Watersheds.

The Town has developed practices to avoid or minimize impacts to surface public water supply sources. These efforts are detailed in Minimum Control Measures section 3.6, Good House Keeping and Pollution Prevention. Among other efforts, the Town prioritizes catchments discharging to Charles River and Echo Lake for implementation of the IDDE program, and the Town prioritizes the enforcement of existing Stormwater Pollution Prevention Plans.

SECTION 2.9 ACTIVITIES TO MONITOR DISCHARGES

The Town will identify any discharges within public drinking water supply source areas and give priority to outfall inspections and screening required of the Minimum Control Measures in Section 3.3. Additionally, the Town will maintain a relationship with the Town of Hopkinton to ensure their discharges do not impact the Echo Lake public water supply source.

SECTION 2.10 ANNUAL PROGRAM EVALUATION

To comply with part 4.1 of the Permit, the Town annually self-evaluates compliance with the terms and conditions of the 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 Permit, the Town focuses on the following minimum control measures. 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 permittee shall implement an education program that includes educational goals based on stormwater issues of significance within the MS4 area. Further detailed in section 4.2, the ultimate objective of a public education program, 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 will continue that program and make the necessary adjustments to meet the additional requirements of the 2016 permit.

The program must include 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

Responsible parties for public education and outreach efforts include the Planning & Engineering Department, Town Clerk, and Board of Health. The Town of Milford is also a member of the Central Massachusetts Stormwater Coalition. The Town of Milford has implemented several actions in efforts to reach public education and outreach goals.

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, as listed below.
   A. Residents
      1. Distribute brochures to educate residents on proper stormwater management; distribute pamphlet encouraging proper management of pet waste; distribute pamphlet on proper maintenances of septic systems.
      2. Provide annual stormwater educational information to televised Board of Selectmen meetings; display educational posters/displays in schools, libraries, and Town Hall; post on Town website.
   B. Businesses, Institutions, and Commercial Facilities

1. Distribute brochures to educate businesses on proper stormwater management.
2. Display educational posters/displays in schools, libraries, and Town Hall.

C. Developers (Construction)
1. Distribute brochures to educate developers on stormwater pollution and proper management on new development/redevelopment.
2. Display educational posters/displays in schools, libraries, and Town Hall.

D. Industrial Facilities
1. Distribute brochures for industrial facility managers on required stormwater management regulations and appropriate BMPs.
2. Display educational posters/displays in schools, libraries, and 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 must also be given the chance to review the Stormwater Management Plan (SWMP) and its implementation.

Section 3.2.1 Background

Responsible parties for public involvement and participation efforts include the Town Engineer, Highway Department, and Board of Health. The Town continues to conduct community cleanup days, advertise, and support hazardous waste collection days, and host scrap metal recycling efforts.

Section 3.2.2 Best management Practices

I. Public Review
   A. Allow annual review of stormwater management plan and posting of stormwater management plan on website.

II. Public Participation
   A. Allow public to comment on stormwater management plan annually.
   B. Continue to support volunteer annual clean-ups along the Charles River.
   C. Continue to advertise and support semi-annual hazardous waste collections.
   D. Continue to advertise, support, and track annual scrap metal recycling efforts.
   E. Continue to host Bike Trail Cleanup events annually.
   F. Continue to hold the Citizens of Milford – trash clean-up day.

SECTION 3.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

The Town shall put an IDDE program, permit part 2.3.4, into place in order to find and eliminate non-stormwater discharge sources to its MS4 system. Procedures shall be implemented to fix any

prevalent issues in the Town's storm sewer system. As identified in the Notice of Intent (NOI), attached in Appendix B, 248 outfalls are located within the Town of Milford's MS4 area. These outfall structures are displayed on *Figure 2: MS4 Urbanized Areas*, and the Town's inventory of outfalls structures is shown in *Figure 4: 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

Impaired Waters	Category	Impairment Cause	Associated TMDLs
Beaver Pond (MA72004)	4a	Mercury in Fish Tissue	42394
Cedar Swamp Pond (MA72016)	4a	(Non-Native Aquatic Plants*)	
		Dissolved Oxygen	40319
		Mercury in Fish Tissue	42395
Charles River (MA72-01)	4a	(Dewatering*)	
		(Flow Regime Modification*)	
		Dissolved Oxygen	40318
Charles River (MA72-33)	4a	(Physical substrate habitat alterations*)	
		Escherichia Coli (E. Coli)	32364
		Nutrient/Eutrophication Biological Indicators	40317
Echo Lake (MA72035)	4a	Mercury in Fish Tissue	33880
North Pond (MA51112)	4c	(Non-Native Aquatic Plants*)	N/A
Mill River (MA51-35)	5	(Non-Native Aquatic Plants*)	
		Aquatic Plants (Macrophytes)	
		Metals	
		PCBs In Fish Tissue	
Charles River (MA72-03)	5	Algae	40317
		DDT in Fish Tissue Dissolved	
		Oxygen Supersaturation	40317
		E. Coli	32366
		Organic Enrichment (Sewage) Biological Indicators	40317
		Phosphorus, Total	40317

Category 4a Waters – impaired water bodies with a completed Total Maximum Daily Load (TMDL).
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 2016 MS4 Permit.
* TMDL not required (non-pollutant).

Section 3.3.1 Background

Responsible parties for IDDE efforts include the Sewer Department, Highway Department, Planning Board, Board of Health, and Conservation Commission. The Milford IDDE bylaws have been

developed and reviewed to include town meeting articles, and a procedure for non-stormwater discharges was established in bylaw amendments to mitigate illegal dumping, see article 63 of the Town bylaws, attached in Appendix H. Town stormwater infrastructure has been mapped in GIS and will continue to be updated when new features are installed and when connectivity is refined.

The Town continues to comply with local bylaws, state, and federal requirements. The IDDE bylaws are continuing to be enforced and there have not been any violations within the past year. Continued local bylaw enforcement has been performed and no violations have been found within the last year.

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. For permittees authorized by the MS4-2003 permit, the 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.

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 five years, as discussed in further detail in section 2.5.
      1. Coordinate with Water/Sewer Division for tracking of any future SSOs.

III. Storm Sewer System Map
   A. Update map within two years of effective date of permit and complete full system map ten years after effective date of permit.
      1. Make an electrical and physical copy of the map available to the public via the stormwater website and Town Hall.
      2. Map/verify 10% of system per year during permit years 1-10.
         a) Phase I will be focused on during Years 1 and 2, while Phase II will be focused on during Years 3 thru 10.
      3. Integrate system map updates with planned utility expansion projects.
      4. Cross reference drainage information to ensure mapping is as accurate as possible.
      5. 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 one year of effective permit date. The IDDE program and permit attachments will be available within the Town Hall at 242 Union Street, Milford, MA 02370.
      1. The written plan will include but is not limited to the following:
         a) Outline of responsibilities
         b) Storm sewer map with locations of known outfalls, including

information on relevant connectivity data gaps

c) Systematic procedure/protocol to detect and eliminate illicit discharges

d) Assessment/ranking of catchments (based on complaints, past water quality data, adjacent failing septic/sewer systems, density, surrounding area, TMDL surface waters)

e) 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 18 months of effective permit date.

1. Continue to enforce IDDE bylaw.
2. Draft and implement stormwater management regulations.
3. Conduct water quality monitoring through dry weather screening

a) The water quality monitoring practice should involve inspections for illicit discharge detection.

VI. Employee Training

A. Coordinate annual stormwater training and incorporate with training required in Section 6.2.IV.B.

VII. Dry Weather Screening

A. Conduct screening in accordance with outfall screening procedure and permit conditions, within three years of effective permit date.

1. Screen 25% of outfalls per year during permit years 2-5.

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.

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):

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

vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.

IX. Conduct ongoing screening upon completion of the IDDE program.

X. IDDE Regulations
   A. Continue to eliminate illicit discharge violations
   B. Review regulations and identify areas for revisions.

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 permittee's MS4, as stated in part 2.3.5 of the Permit.

Section 3.4.1 Background

The Town of Milford has adopted construction site stormwater runoff measures and has continued to enforce local, state, and federal bylaws. A protocol is being developed for submitting as-built drawings electronically and incorporating those files into the Town's GIS system. The Town aims to begin hosting as-built plans electronically.

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 one year of effective date of the Permit.
      1. Recommend standards and practices for town inspection procedures. Seek input from relevant town groups (e.g., Conservation Commission, Highway Department, Planning Board, etc.).
      2. Develop inspection form that includes ESC measures and integrate them with existing Town forms.
   B. Develop protocol for submitting as-built drawings electronically and incorporating those files into the Town's GIS system.

II. Site Plan Review
   A. Complete written procedures of site plan review and begin implementation within one year of the effective date of the Permit.
      1. Include site plan review workflow chart with permit applications.
      2. Review current Town procedure regarding when a Construction General Permit (CGP) is needed.

III. Erosion and Sediment Control Ordinance
   A. Adoption of requirements for construction operators to implement a sediment and erosion control program within one year of the effective date of the Permit.
      1. Set limit of one acre before project requires inspection by Town official.
         a) Coordinate limits and requirements with fill/extraction permits.
      2. Update all Town forms with erosion and sediment control checklist.

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 one year of the effective date of the Permit.
        1. Incorporate into Town's general conditions for building permit and/or site plan review.
        2. Continue to review and modify Town bylaw to meet new requirements.

V. Construction Inspection
    A. Address dam structural assessment findings and conclusions.

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 Best Management Practices

I. Post-Construction Ordinance
    A. The permittee shall develop or modify, as appropriate, an ordinance or other regulatory mechanism within two years of the effective date of the permit.

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 two years of completed construction.
        1. 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 four years of permit effective date.
        1. Inventory Town parcels for existing stormwater BMPs and identify opportunities for GI/LID retrofits.
            a) Include schools, parks, recreation facilities, police/fire/EMS, libraries, public works, and town administrative offices.

IV. Allow Green Infrastructure
    A. Within four 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
        1. Review bylaws and applications in order to incorporate green infrastructure and low impact development language as needed.
        2. Educate the public on green infrastructure through existing BMP retrofits/demonstration projects.

V. Street Design and Parking Lot Guidelines

A. Within four 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
    1. 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.
    A. Within two years of permit effective date, adopt, amend, or modify regulation mechanisms to meet permit requirements.
        1. Review rules and regulations and modify as needed. Include evaluation of subdivision/redevelopment requirements for long-term operations and management of private BMPs.
        2. Continue to implement Post-Construction Site Runoff Control Bylaw.

SECTION 3.6 GOOD HOUSE KEEPING 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

The Town of Milford has developed and implemented an O&M Plan, which is attached as Appendix K. In addition, the Town developed Stormwater Pollution Prevention Plans (SWPPPs) for the Highway Department and Transfer Station.

The Town of Milford conducts annual sweeping of all streets, approximately 60 miles of roadway sweeping, with high visibility and high traffic areas swept twice. The roads are checked regularly and swept as needed to control silts.

Catch basins are cleaned semi-annually. The Highway Department primarily uses sand for deicing purposes and uses a salt/sand mix occasionally for severe storms. The minimized usage of sand for winter operations reduces the need for semi-annual catch basin cleanings. All drain lines are to be jet-cleaned and vacuumed. Additional jet-cleaning will occur when necessary.

Hazardous waste collection takes place annually. Additionally, the Town transfer station offers waste oil and anti-freeze collection to Town residents. The Town also sponsors a drug take back event to minimize pharmaceutical waste from entering the groundwater.

The Town completes annual inspections of its inventory of stormwater best management practices. Inspection reports from previous years' inspections are attached as Appendix M. In addition, the

Town completed an inventory and stormwater audit of all Town-owned facilities in 2020; the audit report is attached as Appendix N.

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 two years of permit effective date.
   A. Develop standards of practice for O&M of each public facility and combine in Town O&M Manual.
II. Inventory all permittee-owned parks and open spaces, buildings, and facilities (including their storm drains), and vehicles and equipment within two years of permit effective date.
   A. Develop a capital improvement plan that deals with flooding prevention measures and water quality improvements.
      1. Coordinate implementation with Section 5.2.II
III. Establish and implement program for repair and rehabilitation of MS4 infrastructure within two years of 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
   A. Develop plan within two years of permit effective date.
   B. Schedule annual employee training.
      1. Continue to investigate workshop and speaking opportunities and seek formal training for all departments
   C. Develop an asset management system to process complaints, permits, inspections, and maintenance.
   D. Continue to implement recycling standards and requirements.
         1. Advertise rigid plastic and antifreeze recycling to public. Enforce new standards for private haulers.
V. Catch Basin Cleaning
   A. Develop and maintain an annual cleaning schedule.
   B. Document catch basins inspected and cleaned, including total mass removed and proper disposal
   C. Develop electronic data collection system for tracking, inspection, and maintenance.
      1. 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
   A. Continue to implement street sweeping program, sweeping streets a minimum of once annually in the spring.
   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
   A. Continue working on salt reduction strategies.
      1. Continue to develop and implement winter road maintenance procedures including use and storage of salt and sand
      2. Continue to minimize the use of salts and ensure that snow is not disposed into water ways.

3. Calibrate spreaders to reduce salt use.

VIII. Inspections and maintenance of stormwater treatment structures.

A. Establish and implement inspection and maintenance procedures for annual inspections/maintenance.

B. Continue documenting catch basin and outfall inspection/condition data.

IX. Hazardous Waste Collection

A. Host annual Household Hazardous Waste Days

X. Waterbody Cleanup

A. Continue to remove debris from Town streams and brooks when necessary.

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 water and ground water. 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:

1) Unimpaired and not threatened for all designated uses;
2) Unimpaired for some uses and not assessed for others;
3) Insufficient information to make assessments for any uses;
4) Impaired or threatened for one or more uses, but not requiring the calculation of a TMDL; or
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, which is also represented in Appendix B, the Notice of Intent. The MS4 area and Town watersheds are shown on *Figure 3: Town Watersheds*, and an overall map of the Town of Milford stormwater system is attached as *Figure 4: Stormwater System Map*.

SECTION 4.1 BACKGROUND

These best management practices aim to improve and mitigate stormwater water quality impairments. This program will focus on impaired waters in Milford requiring a TMDL (Category 5) in Blackstone Watershed and the Charles River Watershed, shown on *Figure 3.*

There are two (2) Category 5 water segments in Milford requiring a TMDL.

1) Mill River (MA51-35) is a 11.8-mile segment, which straddles the northwest border of the Town, has impairments for non-native aquatic plants, aquatic plants (macrophytes), other, and PCB in fish tissue. Only one outfall discharges to the Mill River.
2) Charles River (MA72-03) is a 3.374-mile segment, which straddles the southeast border of the Town, has impairments for DDT, dissolved oxygen saturation, Escherichia coli, excess algal growth, organic enrichment (sewage) biological indicators, and total phosphorus. As of the June 2019, there are no mapped outfalls that discharge to this segment of the Charles River. The Milford wastewater treatment facility is located in close proximity to this segment – the IDDE efforts will focus on any E. coli and phosphorus sources upstream of the WWTF.

There are five (5) Category 4a (TMDL is completed) waterbodies in Milford, including two (2) segments of the Charles River.

1) Beaver Pond is an 86.679-acre waterbody that is located mostly in Bellingham, but has a small section in the southeast corner of Milford. It has an impairment of mercury in fish tissue.
2) Cedar Swamp Pond, known locally as Milford Pond, is a 98.978-acre waterbody that is middle of Town. It has an impairment of non-native aquatic plants, mercury in fish tissue, and dissolved oxygen. Due to the dissolved oxygen impairment, when sampling outfalls that discharge to Milford Pond, the Town should sample for biochemical oxygen demand (BOD) and phosphorus (due to Milford Pond being fresh water).
3) Charles River (MA72-01), a 2.482-mile segment just upstream of Milford Pond, is impaired for low flow alterations, other flow regime alterations, and dissolved oxygen. The Town should follow the same sampling procedure as Milford Pond.
4) Charles River (MA72-33), a 2.037-mile segment just downstream of Milford Pond, is impaired for physical substrate habitat alterations, Escherichia coli, and nutrient/eutrophication biological indicators.
5) Echo Lake is a 72.335-acre waterbody located in the northeast corner of Milford. It is impaired for mercury in fish tissue, but is not with the Town MS4 area.

The majority of the Town outfalls are located within the Charles River Watershed. The Charles River Watershed has a watershed-wide EPA approved TMDL requirement for pathogens and phosphorus. These impairments require Milford to follow the specific requirements listed under Appendix H to mitigate pathogen and phosphorus discharges to the MS4. The Town should prioritize sampling outfalls within the Charles River Watershed for phosphorus, bacteria, and pathogens.

The remaining outfalls in Town are located within the Blackstone Watershed. This watershed does not have a watershed-wide EPA approved TMDL requirement.

SECTION 4.2 ADDITIONAL IMPAIRMENT REQUIREMENTS

Section 4.2.1 Public Education and Outreach

A. Bacteria or Pathogens
    - Distribute an annual message that encourages the proper management of pet waste, including noting any existing ordinances where appropriate.
    - Disseminate educational materials 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 or pathogens.
B. Phosphorus
    - Distribute an annual message in the spring (March/April) timeframe 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) timeframe encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.
- Distribute an annual message in the fall (August/September/October) timeframe encouraging the proper disposal of leaf litter.
- Deliver an annual message on each of these topics, unless the Town determines that one of more of these issues is not a significant contributor of phosphorus to discharges from the MS4.

Section 4.2.2 Stormwater Management in New Development and Redevelopment

A. Phosphorus

- Include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.
- Retrofit inventory and priority ranking under 2.3.6.1.b shall include consideration of BMPs that infiltrate stormwater where feasible.

Section 4.2.3 Good House Keeping and Pollution Prevention

A. Phosphorus

- Establish procedures to properly manage grass cuttings and leaf litter on Town property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces.
- 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 - December 1; following leaf fall).

Section 4.2.4 Illicit Discharge

A. Bacteria or Pathogens

- 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.

Section 4.2.5 Additional Requirements (Phosphorous)

A. Phosphorus

- Complete a legal analysis within two years of the permit effective date. Update as necessary.
- Complete a funding source assessment within three years of the permit effective date.
- Define scope of a Phosphorus Control Plan within four years of the permit effective date. The report shall include the following elements:
    i. Define scope of Phosphorus Control Plan Area

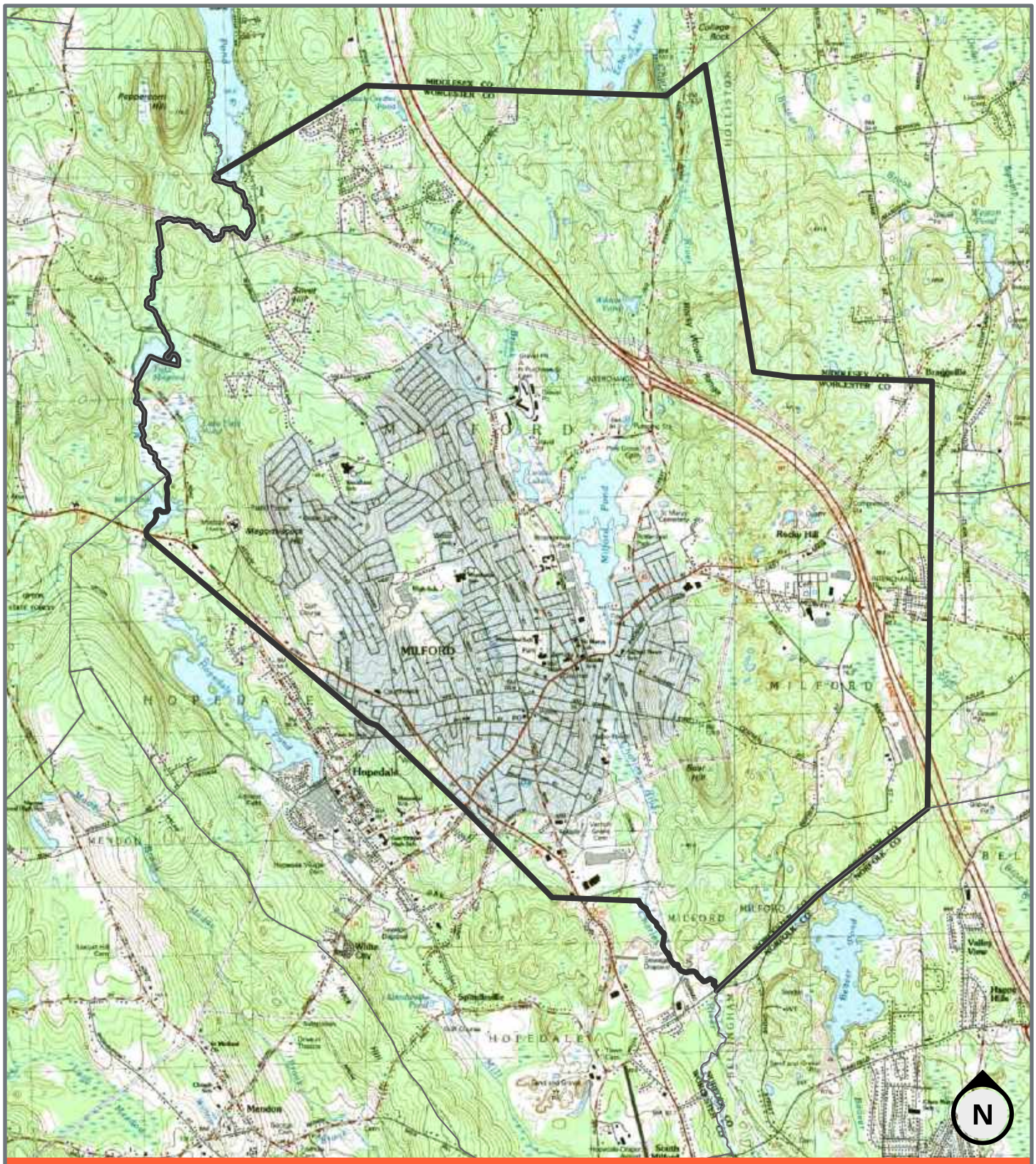
ii. Define Baseline Phosphorus Load
iii. Define Phosphorus Reduction Requirement
iv. Define Allowable Phosphorus Load

- Within year 5, develop a description of Phase I planned non-structural and structural controls.
- Develop an operation and maintenance program for non-structural controls by year 5 of the effective date of the permit.
- Estimate cost for implementing Phase I of the Phosphorus Control Plan by year 5 of the effective date of the permit.
- Provide a listing of planned structural BMPs and a plan and schedule for implementation in the year 5 annual report.
- Submit the final Phase I Phosphorus Pollution Control Plan to EPA as a part of the year 5 annual report.
- Evaluate all Town-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 Pollution Control Plan that are within the drainage area of the impaired water or its tributaries within five years of the permit effective date.
- 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 phosphorus load potential.
- Install the remainder of the structural BMPs in accordance with the plan and schedule provided in the year 5 annual report.
- Track and estimate the phosphorous removal of any structural BMPs listed in Table 3 of Attachment 3 to Appendix F already existing or installed in the regulated area by the Town or its agents consistent with Attachment 1 to Appendix H. For each structural BMP, 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 annual report.
- Annually evaluate the performance of the Phosphorus Control Plan program.
- Complete writing Phase 2 Plan within 10 years of the effective permit date.

At any time during the permit term, the Town may be relieved of additional applicable requirements in Appendix H parts II and III and Appendix F of the MS4 Permit when it is in compliance with the Permit requirements.

FIGURE 1

System Locus



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 1
System Locus

Milford, Massachusetts

0 0.38 0.75 1.5 Miles

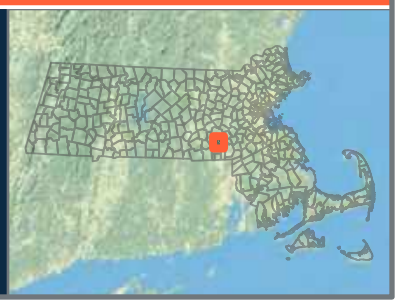
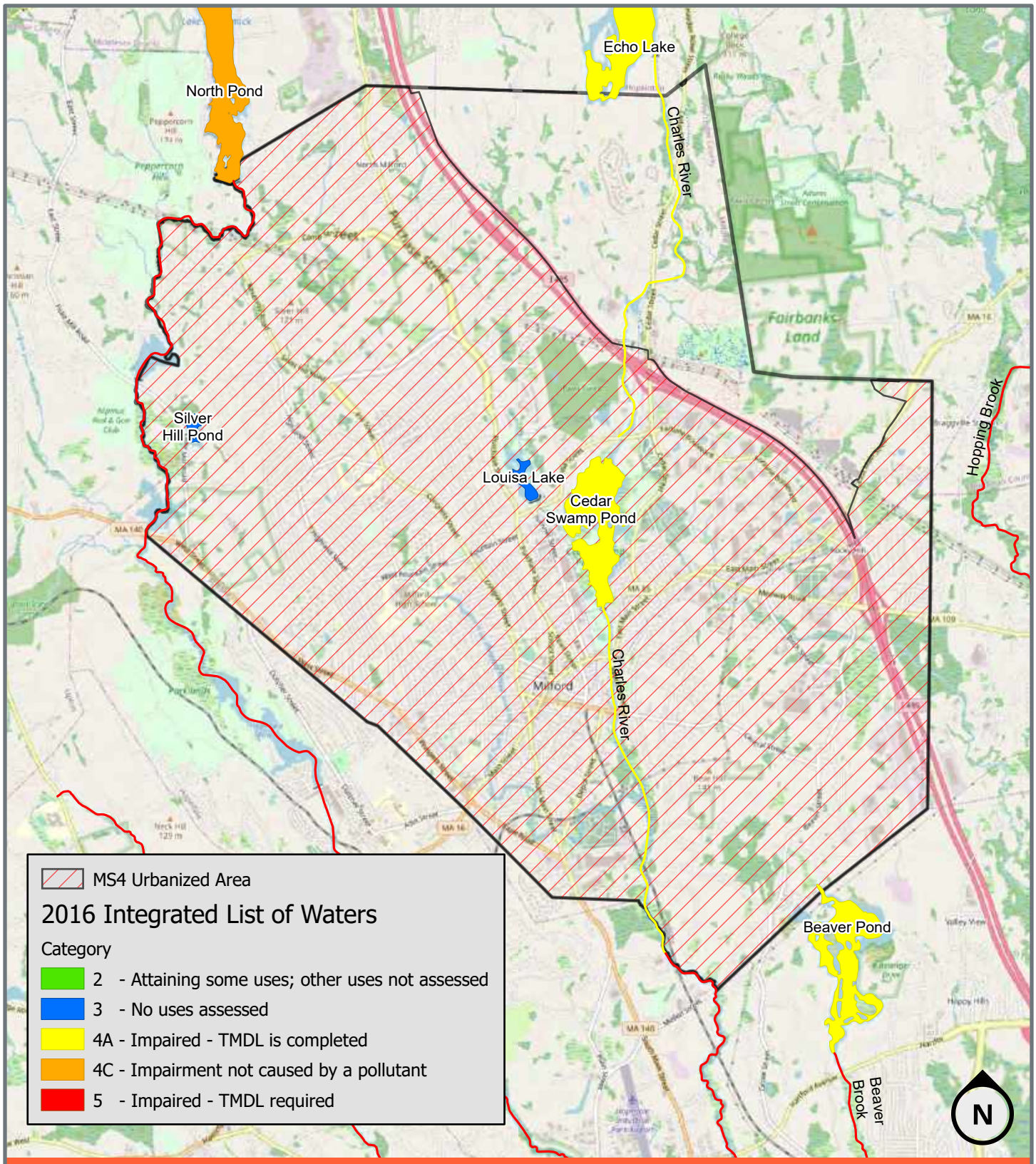


FIGURE 2

MS4 Urbanized Areas



ENVIRONMENTAL PARTNERS
— An Apex Company —

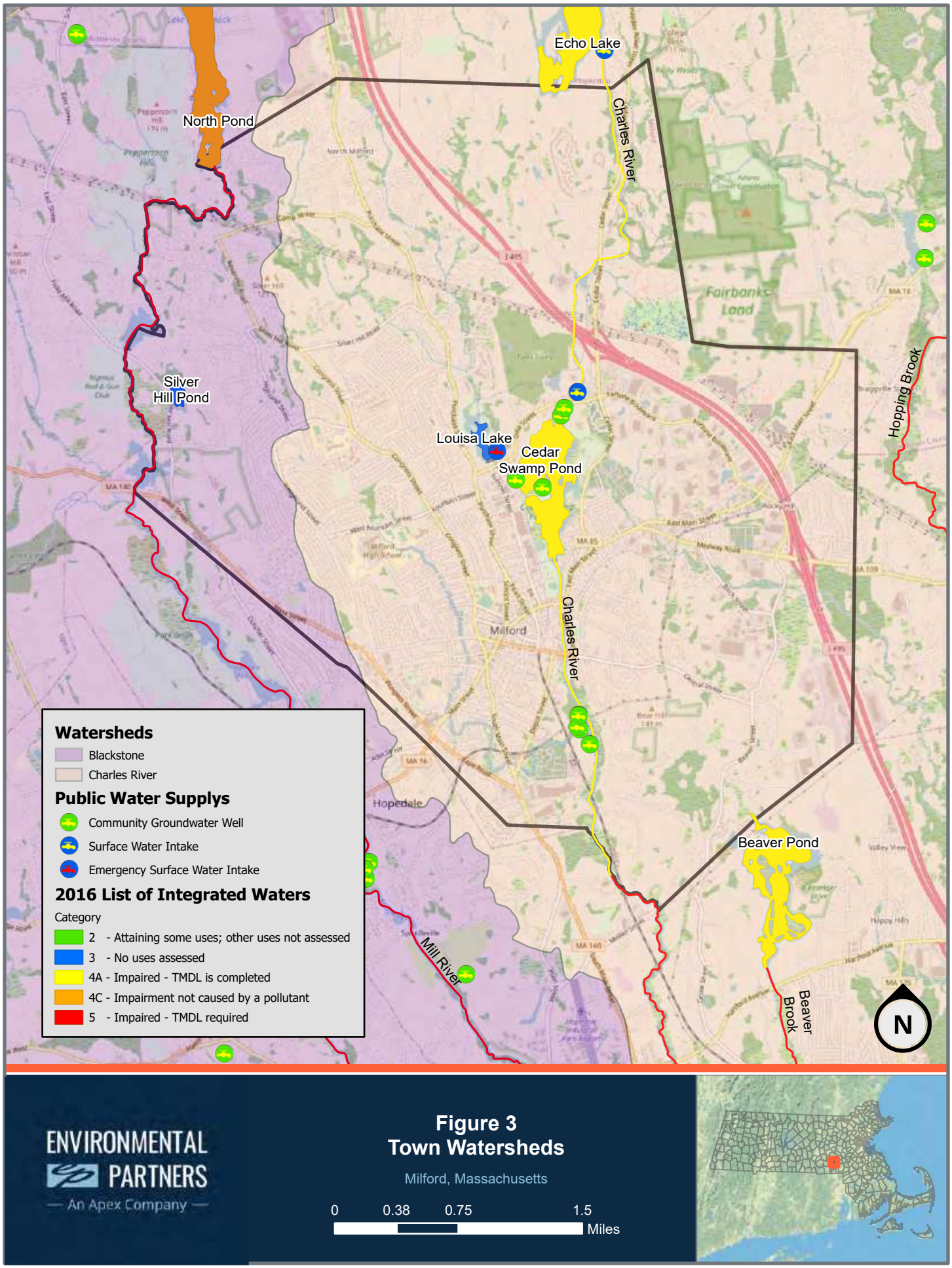
Figure 2
MS4 Urbanized Areas

Milford, Massachusetts

0 0.38 0.75 1.5 Miles

FIGURE 3

Town Watersheds



ENVIRONMENTAL PARTNERS
— An Apex Company —

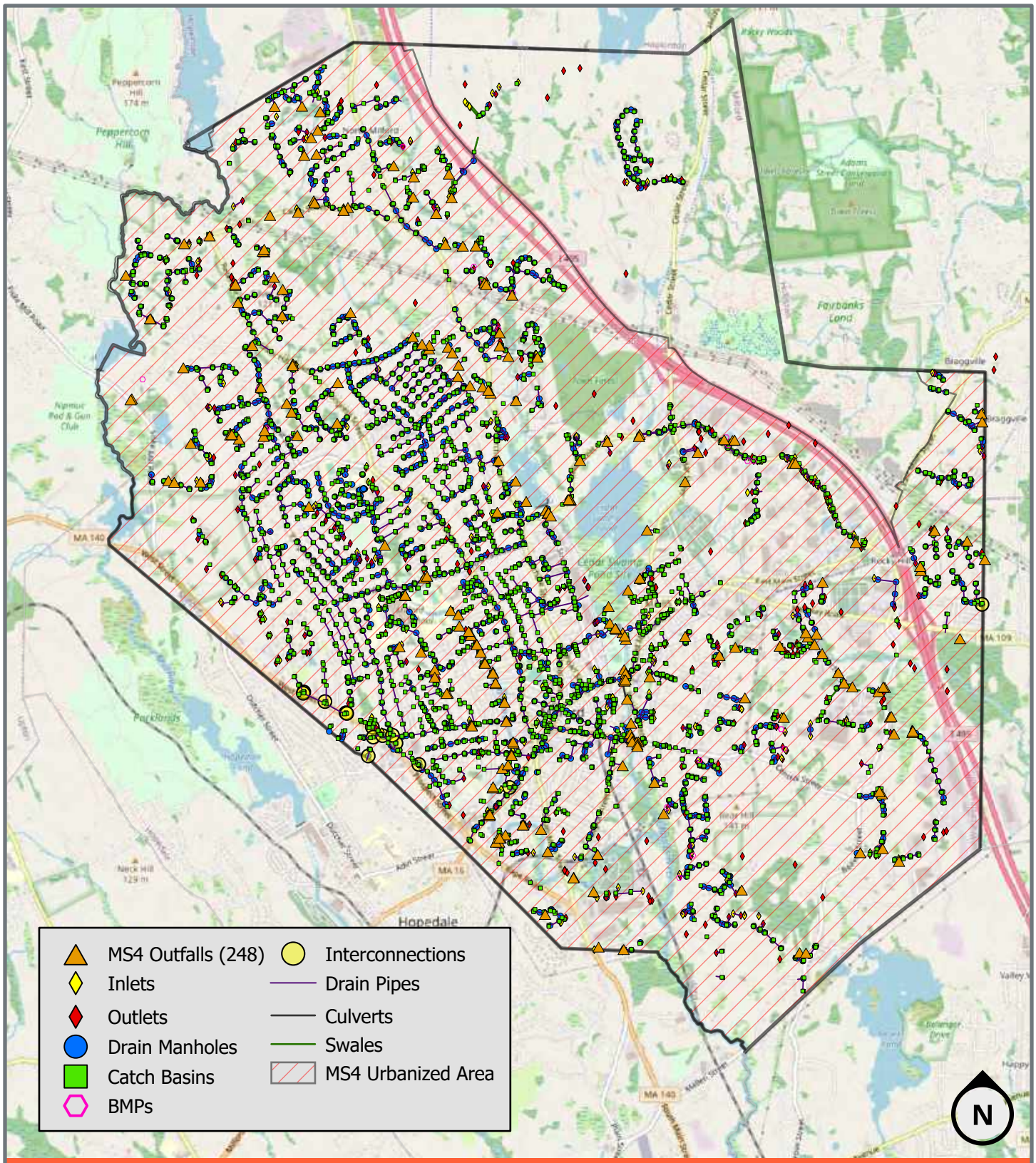
Figure 3
Town Watersheds

Milford, Massachusetts

0 0.38 0.75 1.5 Miles

FIGURE 4

Stormwater System Map

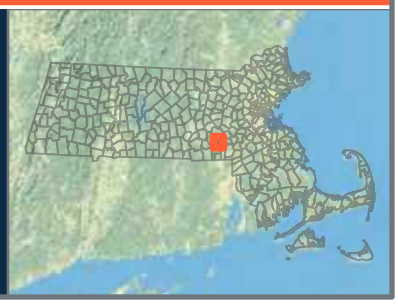


ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 4
Stormwater System

Milford, Massachusetts

0 0.5 1 Miles



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.milfordma.gov/planning-engineering/pages/town-milford-stormwater-management-plan

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: Town of Milford State: MA

EPA NPDES Permit Number (if applicable): MAR041135

Primary MS4 Program Manager Contact Information

Name: Scott Crisafulli Title: Highway Supervisor

Street Address Line 1: 30 Front Street

Street Address Line 2:

City: Milford State: MA Zip Code: 01757

Email: SCrisafulli@townofmilford.com Phone Number: (508) 473-1274

Fax Number: (508) 634-2348

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed): www.milfordma.gov/sites/milfordma/files/uploads/milford_-_noi_-_ms4_outfalls.pdf

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)

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): 10/24/05

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): 10/24/05

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): 10/24/05

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

Part II: Summary of Receiving Waters

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

Waterbody that receives flow from the MS4 and segment ID if applicable	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
Charles River (MA72-33)	10	☐	☐	☐	☐	☐	☐	☐	☒	☐	Physical Substrate habitat alterations, Nutrient/Eutrophication Biological Indicators
Godfrey Brook	41	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Huckleberry Brook	12	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Little Field Pond	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Louisa Lake (MA72068)	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Milford Pond/Cedar Swamp Pond (MA72016)	18	☐	☐	☒	☐	☐	☐	☐	☐	☐	Non-Native Aquatic Plants, Mercury in Fish Tissue
Mill River (MA51-35)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	Non-Native Aquatic Plants, Aquatic Plants, Other, PCB in Fish Tissue
Unnamed Pond East of Milford Pond (42.15540, -71.49270)	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Pond North of Huckleberry Brook (42.17149, -71.52405)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Pond North of Louisa Lake (42.17022, -71.53977)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Stream East of Fisk Millpond (42.16910, -71.54641)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Stream East of Milford Pond (42.15315, -71.49007)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary North of Silver Hill (42.17466, -71.54829)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Beaver Pond (42.13053, -71.48641)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Huckleberry Brook (42.17854, -71.52993)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Huckleberry Brook (7) (42.18160, -71.54428)	9	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Unnamed Tributary to Huckleberry Brook (3) (42.17783, -71.54002)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Huckleberry Brook (4) (42.17520, -71.55595)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Waterbody that receives flow from the MS4 and segment ID if applicable	**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 Huckleberry Brook (5) (42.17466, -71.54829)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Huckleberry Brook (6) (42.17191, -71.54636)	16	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Louisa Lake (42.16461, -71.52635)	12	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Milford Pond (42.15710, -71.50722)	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Stall Brook (42.14095, -71.49762)	18	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands East of Huckleberry Brook (42.16876, -71.52526)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands East of Milford Pond (42.15932, -71.49675)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands near Little Field Pond (42.15794, -71.55690)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands near Tributary to Stall Brook (42.13974, -71.48690)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands South of North Pond (42.17725, -71.54760)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Fiske Millpond	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to Stall Brook (42.14094, -71.49762)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands West of Hopping Brook (42.15449, -71.48300)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	

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	Brochures to educate the town residents on proper stormwater management	Residents	Planning and Engineering Dept	Update and distribute messages annually	2019
Displays/Posters/Kiosks	Educational posters/ displays in schools, libraries, and Town hall	General Public	Planning and Engineering Dept	Posters updated annually	2019
Brochures/Pamphlets	Brochures to educate developers on stormwater pollution and proper management on new and redevelopment	Developers (construction)	Planning and Engineering Dept	Prepare and distribute messages on stormwater controls to development community every 2 years	2019
Brochures/Pamphlets	Brochures for industrial facility managers on required stormwater management regulations and appropriate BMPs	Industrial Facilities	Planning and Engineering Dept	Prepare and distribute messages on stormwater management targeting industrial operations every 2 years	2019
Brochures/Pamphlets	Pamphlet encouaging proper management of pet waste	Residents/Dog Owners	Town Engineer and Town Clerk	Disseminate with dog licenses annually and make available at select public locations	2019

Brochures/Pamphlets	Pamphlet on proper maintenances of septic system	Owners of Septic Systems	Board of Health	Update and distribute bi-annually to septic system owners	2019
Meeting	Provide annual stormwater educational information to televised Board of Selectmen meetings	Municipal Officials and Public	Town Engineer and Highway Department	Schedule and participate in an annual presentation to BOS	2019

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

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 Imple-mentation
Public Review	SWMP Posting and Review	Town Engineer and Highway Dept	Allow annual review of stormwater management plan and posting of stormwater management plan on website. Allow public to comment annually	2019
Public Participation	Cleanups - Shoreline/Waterbody	Highway Dept	Continue to support volunteer annual clean-ups along the Charles River. Track and report annually	2019
Public Participation	Household haz. waste/used oil collection	Highway Dept and Board of Health	Continue to advertise and support semi-annual hazardous waste collections. Track and report results annually	2019
Public Participation	Scrap Metal Recycling	Highway Dept and Board of Health	Continue to advertise, support, and track annual recycling efforts	2019

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	Board of Health/Sewer Dept	Complete within 1 year of effective date of permit	2019
Storm sewer system map	Create map and update during IDDE program completion	Highway Dept and Town Engineer	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2020
Written IDDE program	Update written IDDE program to address nutrient and pathogen pollution concerns.	Highway Dept and Town Engineer	Complete plan within 1 year of the effective date of permit and update as required. Complete catchment data with 18 months.	2019
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Highway Dept and Town Engineer	Complete investigation of 30% problem areas by year 2 and complete 10 years after effective date of permit	2020
Employee training	Train employees on IDDE implementation	Highway Dept	Train annually	2019
Conduct dry weather screening	Develop local procedures and conduct in accordance with outfall screening permit conditions	Highway Dept	Complete 3 years after effective date of permit	2021
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Highway Dept	Begin sampling in catchments with identified System Vulnerability Factors. Complete 10 years after effective date of permit	2023

Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Highway Dept	Complete ongoing outfall screening, as needed, upon completion of IDDE program. report follow-up screening activities annually (as applicable).	2024

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	Town Engineer and Conservation Commission	Complete within 1 year of the effective date of permit	2019
Site plan review	Complete written procedures of site plan review and begin implementation	Planning and Engineering Dept	Complete within 1 year of the effective date of permit	2019
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Planning and Engineering Dept	Complete within 1 year of the effective date of permit	2019
Waste Control	Adoption of requirements to control construction site wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Highway Dept and Town Engineer	Complete within 1 year of the effective date of permit	2019

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	Update procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Planning and Engineering Dept	Update requirements for submission of as-built plans for completed projects	2020
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	Highway Dept and Town Engineer	Complete 4 years after effective date of permit and report annually on retrofitted properties	2022
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	Planning and Engineering Dept	Complete 4 years after effective date of permit and implement recommendations of report	2022
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.	Town Engineer	Complete 4 years after effective date of permit and implement recommendations of report	2022

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	Town Engineer	Complete 2 years after effective date of permit	2020

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 Imple-mentation**
O&M procedures	Create written O&M procedures including all stormwater management requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	Highway Dept	Complete and implement 2 years after effective date of permit	2020
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory focused on stormwater management requirements	Highway Dept	Complete 2 years after effective date of permit and implement annually	2020
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	Highway Dept and Town Engineer	Complete 2 years after effective date of permit	2020
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	Highway Dept	Complete and implement 2 years after effective date of permit	2020
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	Highway Dept	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2020
Street sweeping program	Sweep all streets and permitee-owned parking lots in accordance with permit conditions	Highway Dept	Sweep all streets and permitee-owned parking lots once per year in the spring	2020
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	Highway Dept	Implement salt use optimization during deicing season	2020

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	Highway Dept	Inspect and maintain treatment structures at least quarterly	2020

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)
Upper/Middle Charles River (Phosphorus)	Adhere to requirements in part A.I of Appendix F	Highway Dept
Charles River Watershed (Bactria/Pathogen)	Adhere to requirements in part A.III of Appendix F	Highway Dept

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. In addition, if you are subject to additional requirements due to a downstream nutrient impairment (see Part 2.2.2 of the permit) select the pollutant of concern and indicate applicable waterbody IDs or write "all waterbodies" if applicable. 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)

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.

Please note that the regulated outfall information for the Town is being updated and the information provided in Part II: Summary of Receiving Waters was selected based on the Town's regulated outfalls discharging within a 100 foot distance of any waters of the U.S. Coordinates listed under unnamed water segments are based on the NAD 1983 State Plane Massachusetts FIPS 2001 (US Feet) Coordinate System, and are listed as latitude/longitude in decimal degrees.

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: MICHAEL K WALSH

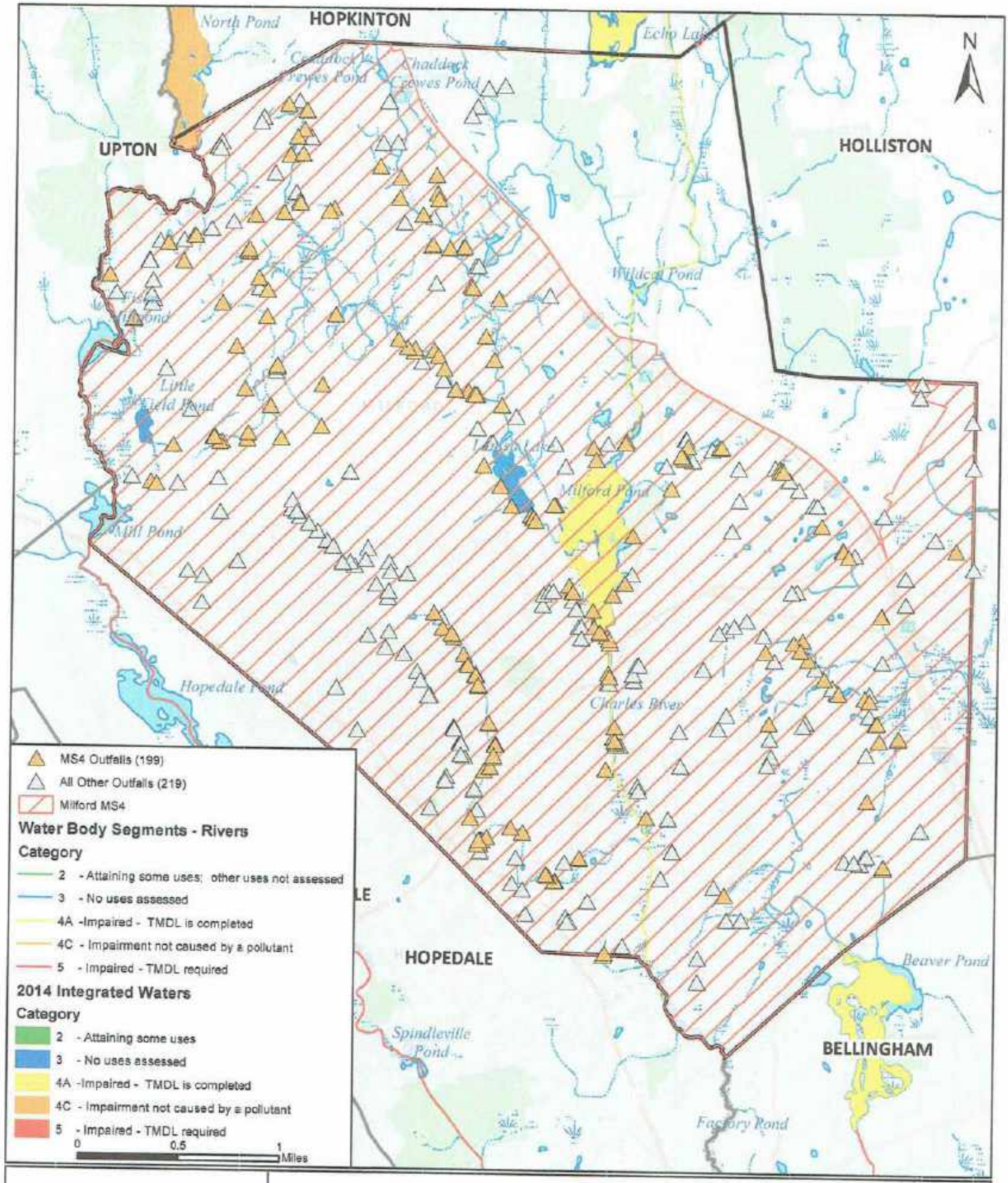
Title: CHAIR BOARD OF SELECTMEN

Signature: M. K. Walsh

Date: 9-25-18

[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



MS4 Outfalls
Milford, Massachusetts
September 2018

Environmental Partners

APPENDIX C

Permit Schedule

MS4 Permit
Draft Schedule
Town of Milford, Massachusetts

July 2018 – MS4 Permit effective date to coincide with start of FY18

September 25, 2018 – Submit Updated NOI (within 90 days of effective date)

July 2019 – Items due within 1 year of effective date

- Submit Updated Stormwater Management Plan
- Additional Mapping – update stormwater system GIS for connectivity (as needed)
- Written IDDE Plan, identify catchments contributing to areas with Bacteria and Phosphorus as High Priority
- Inventory Town Facilities
- Develop O&M for Town Facilities – Highway Facilities, Parks/Recreation, Town Hall, Schools
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education/Outreach (*x2 for Impaired Water Requirements*)**
    - Bacteria and Pathogens: Targeting Dog Waste / Septic Systems – Charles River (Segment MA72-33)
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Charles River (Segment MA72-03)
- Property Management for Phosphorus – fertilizer use, 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
- Evaluate street sweeping and catch basin cleaning frequency
- Updated Ordinance for Phosphorus**
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x2 for Impaired Water Requirements*)**
    - Bacteria: Targeting Dog Waste / Septic Systems – Charles River (Segment MA72-33)
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Charles River (Segment MA72-03)

- 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
- Complete dry weather outfall sampling and catchment ranking table
- Ongoing Outfall Sampling (dry) / Inspections / Update Mapping
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x2 for Impaired Water Requirements*)**
    - Bacteria: Targeting Dog Waste / Septic Systems – Charles River (Segment MA72-33)
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Charles River (Segment MA72-03)
- 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
- Draft street design and parking lot guidelines report – Post-Construction Management
- Inventory/Priority Ranking of LID retrofits on Town-Owned Property – Post-Construction Management
- Draft green infrastructure (GI) report – 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 (*x2 for Impaired Water Requirements*)**
    - Bacteria: Targeting Dog Waste / Septic Systems for – Charles River (Segment MA72-33)
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Charles River (Segment MA72-03)
- Phosphorus Control Plan**
- 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

- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x2 for Impaired Water Requirements*)**
    - Bacteria: Targeting Dog Waste / Septic Systems for – Charles River (Segment MA72-33)
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – Charles River (Segment MA72-03)
- Evaluate all Properties for BMPs – Phosphorus removal**
- Plan and Scheduled for BMPs - Phosphorus removal**
- Public Participation
- Annual Training

***Additional requirements for Water Quality Assessment are required due to documented bacteria, turbidity, and phosphorus impairments. (see Appendix H, sections II, III, and V.)*

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: April 03, 2019
Consultation Code: 05E1NE00-2019-SLI-1307
Event Code: 05E1NE00-2019-E-03054
Project Name: Milford MS4

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: 05E1NE00-2019-SLI-1307

Event Code: 05E1NE00-2019-E-03054

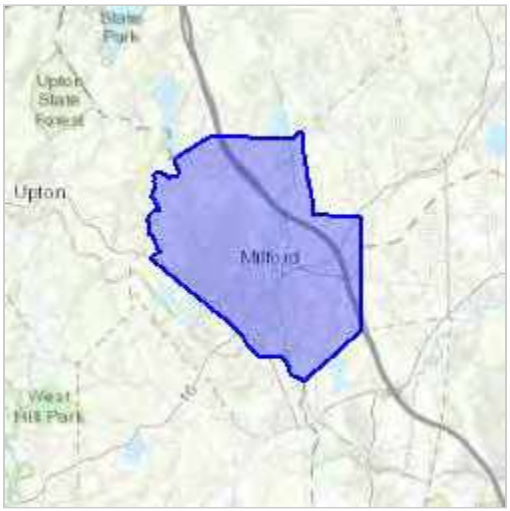
Project Name: Milford MS4

Project Type: ** OTHER **

Project Description: Milford Stormwater

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.153987765811735N71.52050737322769W



Counties: Middlesex, MA | Norfolk, MA | Worcester, 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 Tracking Log

New or Increased Discharges

Milford, MA

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

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

APPENDIX G

SSO Inventory

Table 4-1 . SSO Inventory
Milford, Massachusetts
Revision Date: September 2021

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]
495 Pump Station	Entered MS4, catch basin to receiving water	4/2/14	9:55am	9:55am	200-300 gal	Crack in sewer force main	Repaired force main, septic company pumped drain and retaining pond, spread pulverized lime	
Field Pont Pump Station	Entered MS4, ground surface discharge	4/12/14	11:35am	2:30pm	<100 gal	Leak in sewer force main	Repaired force main	
West Pine Street and Gibon Street	Entered MS4, ground surface discharge	9/2/15	3:10pm	3:45pm	<100 gal	Grease blockage	Area cleaned, disinfected with 2 bags of lime	
495 Pump Station on Route 109	Entered MS4, ground surface discharge	3/10/16	11:10am	11:22am	<200 gal	Force main break	Force main repaired, area cleaned and disinfected with lime	
18 Purdue Street near Field Pond Pump Station	Entered MS4, ground surface discharge	5/21/16	4:10pm	8:00pm	Unknown	Force main break	Force main repaired, area cleaned and disinfected with lime	
18 Purdue Street near Field Pond Pump Station	Entered MS4, ground surface discharge	7/25/17	5:00pm	5:45pm	<100 gal	Force main break	Force main repaired, area cleaned and disinfected with lime	
31 Parkhurst Street	Entered MS4, ground surface discharge	8/3/17	4:10pm	5:00pm	<100 gal	Grease blockage	Jetted the line to remove grease blockage, area cleaned and disinfected with lime	
18 Purdue Street near Field Pond Pump Station	Entered MS4, ground surface discharge	3/14/18	6:28pm	8:05pm	<100 gal	Force main break	Force main repaired, area cleaned and disinfected with lime	
173-250 Main Street	Backup into property basement	11/3/18	-	-	Unknown, overflow confined to businesses	Sewer system blockage	Flushed and cleared partial blockage in manhole; cleaning/disinfecting addressed by property owners	
12-14 Colonial Road	Discharge Statement2	2019	-		Estimated Volume4	Grease blockage	Mitigation Completed6	

[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 schedule

APPENDIX H

Current Stormwater Bylaws

TOWN OF MILFORD, MASSACHUSETTS

STORMWATER MANAGEMENT GENERAL BY-LAW

EROSION AND SEDIMENT CONTROL,
POST-CONSTRUCTION STORMWATER MANAGEMENT AND
DISCHARGE CONTROL

10-24-05

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TOWN OF MILFORD, MASSACHUSETTS
GENERAL BY-LAWS

ARTICLE 36

STORMWATER MANAGEMENT BY-LAW

Adopted by Town Meeting 10-24-05
Approved by Attorney General 2-9-06

SECTION I. PURPOSE AND AUTHORITY

1.1 Purpose

The purpose of this By-Law is to protect, maintain, and enhance the public health, safety, and general welfare of the citizens of Milford, and protect and enhance the water quality of watercourses and water bodies, through the management of land development by establishing minimum requirements and procedures to control the adverse impacts associated with stormwater runoff and through the regulation of non-stormwater discharges to the municipal separate storm sewer system.

1.2 Administration

This By-Law shall be administered and enforced by the Town of Milford, acting by and through its Town Engineer, under the supervision of the Board of Selectmen. In the absence of the Town Engineer, administration and enforcement action may be undertaken by such individual or individuals as may be designated in writing by the Board of Selectmen.

SECTION II. DEFINITIONS

The following definitions describe the meaning of the terms used in this By-Law:

"Adverse impact" means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses, which are or may potentially be harmful or injurious to human health, welfare, safety or property, biological productivity, diversity, or stability, or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

"Best management practice (BMP)" is a structural or biological device that temporarily stores or treats urban stormwater runoff to reduce flooding, remove pollutants, and manage stormwater runoff. A BMP may also be a non-structural practice that reduces pollutants at their source. BMPs are described in a stormwater design manual, Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Massachusetts Department of Environmental Protection [MADEP], as updated or amended).

"Construction activity" is disturbance of the ground by removal of vegetative surface cover or topsoil, grading, excavation, clearing or filling.

"Disturbance" is any land clearing, grading, bulldozing, digging, or similar activities.

"Hydrology model" may include one of the following:

a. TR-20, a watershed hydrology model developed by the Natural Resources Conservation Service (NRCS) that is used to route a design storm hydrograph through a pond;
b. TR-55, or Technical Release 55, "Urban Hydrology for Small Watersheds", a publication developed by the NRCS to calculate stormwater runoff and an aid in designing detention basins; or
c. HydroCad or other comparable software models.

"Illegal discharge" is any direct or indirect non-stormwater discharge to the municipally owned separate storm sewer system, except as exempted in Section X of this By-Law.

"Illicit connections" are defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the municipally-owned separate storm sewer system including but not limited to any conveyances which allow any non-stormwater 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.

"Municipally owned separate storm sewer system (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

a. Owned or operated by a State, city, township, county, district, association, or other public body (created by or pursuant to State law) including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, that discharges into waters of the state.
b. Designed or used for collecting or conveying stormwater;
c. Which is not a combined sewer; and
d. Which is not part of a Publicly Owned Treatment Works."

"National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit" means a permit issued by EPA 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.

"Waters of the United States" are surface watercourses and water bodies as defined at 40 CFR § 122.2, including all natural waterways and defined channels and depressions in the earth that may carry water, even though such waterways may only carry water during storms and may not carry stormwater during all times and seasons.

SECTION III. APPLICABILITY

3.1 Applicability

This By-Law shall apply to all flows entering the municipally owned separate storm sewer system (MS4) generated on any developed and undeveloped lands within the Town of Milford including any amendments or revisions thereto, unless explicitly exempted by an authorized enforcement agency.

Prior to the issuance of any building permit for any proposed development listed below, a stormwater management permit, or a waiver of the requirement for a stormwater management permit, must be approved by the Office of Planning and Engineering. No person shall, on or after the effective date of this By-Law, initiate any land clearing, land grading, earth moving or development activities without first complying with this By-Law. The following activities shall be required to submit drainage reports, plans, construction drawings, specifications and as-constructed information in conformance with the requirements of this By-Law:

3.1.1 Construction activities of any kind disturbing greater than 43,560 square feet (1 acre) or which is part of a common plan of development or sale that will disturb greater than 43,560 square feet (1 acre).

3.2 Exemptions

To prevent the adverse impacts of stormwater runoff, the Milford Office of Planning and Engineering has developed a set of performance standards that must be met at new development sites. These standards apply to construction activities as described under Section 3.1. The following activities may be exempt from these stormwater performance standards:

3.2.1 Any agricultural activity which is consistent with an approved soil conservation plan prepared or approved by the Natural Resource Conservation Service.

3.2.2 Any logging which is consistent with a timber management plan approved under the Forest Cutting Practices Act by Massachusetts Department of Environmental Management.

3.2.3 Additions or modification to existing single-family structures.

3.2.4 Any emergency activity that is immediately necessary for the protection of life, property or the environment, as determined by the Office of Planning and Engineering.

3.2.5 Construction activities on sites with an overall area greater than one acre with written certification by a registered professional engineer or registered land surveyor that the land disturbance will be less than one acre.

3.2.6 Projects permitted and approved by the Town of Milford prior to the effective date of this By-Law.

3.2.7 Projects that have filed a Notice of Intent with the Milford Conservation Commission and that included a fully executed Stormwater Management Form and that were designed in conformance with the MADEP's Stormwater Management Policy and the Stormwater Design Manual, and that have obtained a valid Order of Conditions from the Town of Milford Conservation Commission or the MADEP.

3.3 Stormwater Design Manual

A stormwater design manual, Stormwater Management, Volume One: Stormwater Policy Handbook and Volume Two: Stormwater Technical Handbook (March, 1997, MADEP, as updated or amended) is hereby incorporated by reference as part of this By-Law, and shall furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the requirements of this By-Law.

SECTION IV. COMPATIBILITY WITH OTHER PERMIT AND BY-LAW REQUIREMENTS

This By-Law is not intended to interfere with, abrogate, or annul any other by-law, rule or regulation, statute, or other provision of law. The requirements of this By-Law should be considered minimum requirements, and where any provision of this By-Law imposes restrictions different from those imposed by any other by-law, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

SECTION V. PERMIT PROCEDURES AND REQUIREMENTS

5.1 Permit Required

No land owner or land operator shall commence any work under a Building Permit, a Definitive Plan for Subdivision, or other grading or land development permit required for land disturbance activities, and no land owner shall commence land disturbance activities, without approval of a Stormwater Management Permit from the Office of Planning and Engineering and meeting the requirements of this By-Law, unless the project has included a fully executed Stormwater Management Form and was designed in conformance with the MADEP's Stormwater Management Policy and the Stormwater Design Manual, and which has obtained a valid Order of Conditions from the Town of Milford Conservation Commission or the MADEP.

5.2 Application Requirements

Application for approval of a Stormwater Management Permit shall include the following:

5.2.1 A complete Stormwater Management and Erosion and Sediment Control Plan (Plan) or an application for waiver shall be submitted to the Milford Office of Planning and Engineering for review and approval for any proposed development specified in Section 3.1 prior to or concurrently with any building permit application or Preliminary or Definitive Plan for subdivision approval. Three copies of the Plan shall be submitted, and clearly labeled, along

with other documents required in the zoning by-law for site plan review. The Plan shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire development. The Plan shall serve as the basis for all subsequent construction.

5.2.2 An Operation, Maintenance and Inspection Schedule.

5.2.3 Non-refundable permit review and inspection fee.

The applicant may request, and the Milford Office of Planning and Engineering may grant, a waiver from any information requirements it judges to be unnecessary to the review of a particular plan.

5.3 Procedures for Review and Approval of Stormwater Permits

5.3.1 The procedures for review and approval of stormwater management plans shall be consistent with Section 5.4 Criteria for Review of Stormwater Permits and Section 5.5 Office of Planning and Engineering Action, as appropriate to the use.

5.3.2 The Office of Planning and Engineering shall have seven days from the receipt of the application to review the application for administrative completeness.

5.3.3 The Office of Planning and Engineering shall take final action within twenty-one days of the receipt of a complete application unless such time is extended by agreement between the applicant and the Office of Planning and Engineering. The twenty-one days includes the seven day administrative completeness review period (Section 5.3.2) for applications found to be complete. The twenty-one day review period will re-commence upon receipt of a re-submitted application for those applications found to be administratively incomplete.

5.4 Criteria for Review of Stormwater Permits

In addition to other criteria used by the Milford Office of Planning and Engineering in making permit decisions, for the uses specified in this By-Law, the Office of Planning and Engineering must also find that the Stormwater Management Plan submitted with the permit application meets the following criteria:

5.4.1 The Stormwater Management Plan and the Erosion and Sediment Control Plan are consistent with the Purposes and Objectives of this Bylaw in Section I.

5.4.2 The Stormwater Management Plan meets the Performance Standards described in Section VII.

5.4.3 The Erosion and Sediment Control Plan must meet the Design Requirements in Section VIII.

5.5 Office of Planning and Engineering Action

The Office of Planning and Engineering's action, rendered in writing and submitted to the applicant and the appropriate Town Department(s) and Board(s), shall consist of either:

5.5.1 Disapproval of the Stormwater Management Permit Application based on a determination within seven days of the receipt of the application that the application is administratively incomplete;

5.5.2 Approval of the Stormwater Management Permit Application based upon determination that the proposed plan meets the requirements in Section I and the standards in Section VII and Section VIII and will adequately protect the water resources of the community and is in compliance with the requirements set forth in this By-Law;

5.5.3 Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Office of Planning and Engineering which will ensure that the project meets the purposes in Section I and the standards in Section VII and Section VIII and adequately protects water resources, as set forth in this By-Law; or

5.5.4 Disapproval of the Stormwater Management Permit Application based upon a determination that the proposed plan, as submitted, does not meet the requirements in Section I and the standards in Section VII and Section VIII or adequately protect water resources, as set forth in this By-Law.

Failure of the Office of Planning and Engineering to take final action upon an Application within the time specified above shall be deemed to be approval of said Application and shall authorize the applicant to proceed in accordance with the plans filed unless such time is extended by agreement between the applicant and the Office of Planning and Engineering.

5.6 Inspections

The Office of Planning and Engineering shall inspect the work and either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved plan. Any portion of the work which does not comply shall be promptly corrected by the applicant or the applicant will be subject to the performance guarantee provisions of Section XI or the penalty provisions of Section XII. The Town may conduct random inspections to ensure effective control of erosion and sedimentation during all phases of construction.

5.7 Right-of-Entry for Inspection

When any new drainage control facility is installed on private property, or when any new connection is made between private property and a municipal drainage system, the filing of a stormwater management permit application shall be deemed as the property owner's permission to the Milford Office of Planning and Engineering or its agent or designee for the right to enter the property at reasonable times and in a reasonable manner for the purpose of the inspection. This includes the right to enter a property when it has a reasonable basis to believe that a

violation of this By-Law is occurring or has occurred, and to enter when necessary during emergencies, for abatement of a public nuisance or correction of a violation of this By-Law.

5.8 Application Review and Inspection Fees

The fee for review and inspection of any land development application shall be based on the amount of land to be disturbed at the site and the fee structure established by the Milford Board of Selectmen. All of the monetary contributions shall be credited to the Stormwater Revolving Fund, and shall be made prior to issuance of any building permit for development.

5.9 Permit Duration

Permits issued under this By-Law shall be valid from the date of issuance through the date the Milford Office of Planning and Engineering notifies the permit-holder that all stormwater management practices have passed the final inspection required under permit conditions.

SECTION VI. THE STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL PLAN

6.1 Contents of the Stormwater Management and Erosion and Sediment Control Plan

The application for a stormwater management permit shall consist of submittal of a Stormwater Management and Erosion and Sediment Control Plan (Plan), prepared by a professional engineer licensed by the Commonwealth of Massachusetts, which meets the design requirements provided by this By-Law. The Plan shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The Plan must be designed to meet the Massachusetts Stormwater Management Standards as set forth in Section VII of this By-Law and the MADEP's Stormwater Mangement Handbook Volumes I and II.

SECTION VII. STORMWATER MANAGEMENT PERFORMANCE STANDARDS

7.1 Minimum Control Requirements

Projects must meet the Stormwater Management Standards of the Massachusetts Stormwater Management Policy.

The Office of Planning and Engineering may waive the requirement that post-development peak discharge rates not exceed pre-development peak discharge rates, in developed urban areas, upon approval of an evaluation of available capacity in the Town's stormwater system, prepared by a Massachusetts registered professional engineer. When the proposed discharge may have an impact upon a sensitive receptor, including streams, and/or storm sewers, the Office of Planning and Engineering may require more stringent controls, based on existing capacity.

7.2 Stormwater Management Measures

7.2.1 Stormwater management measures shall be required to satisfy the minimum control requirements and shall be implemented in the following order of preference:

a. Infiltration, flow attenuation, and pollutant removal of runoff on-site to existing areas with grass, trees, and similar vegetation and through the use of open vegetated swales and natural depressions;
b. Stormwater detention structures for the temporary storage of runoff which is designed so as not to create a permanent pool of water; and
c. Stormwater retention structures for the permanent storage of runoff by means of a permanent pool of water.

7.2.2 Infiltration practices shall be utilized to reduce runoff volume increases. A combination of successive practices may be used to achieve the applicable minimum control requirements. Justification shall be provided by the applicant for BMP selection based on site conditions.

7.2.3 Best Management Practices shall be employed to minimize pollutants in stormwater runoff.

7.2.4 All stormwater management facilities shall be designed to provide an emergency overflow system, and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.

7.2.5 The designed release rate of any stormwater structure shall be modified if any increase in flooding or stream channel erosion would result at any downstream point.

SECTION VIII. DESIGN REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL PLAN

Projects must meet the erosion and sediment control provisions of the Massachusetts Stormwater Management Policy.

SECTION IX. MAINTENANCE

9.1 Operation, Maintenance and Inspection Schedule for Privately-Owned Facilities

9.1.1 Prior to issuance of any building permit for which stormwater management is required, the Office of Planning and Engineering shall require the applicant or owner to execute an operation, maintenance and inspection schedule (schedule) binding on all subsequent owners of land served by the private stormwater management facility. The schedule shall be designed to ensure that water quality standards are met in all seasons and throughout the life of the system. Such schedule shall provide for access to the facility at reasonable times for regular inspections by the Town or its authorized representative and for regular or special assessments of property owners to ensure that the facility is maintained in proper working condition to meet design standards and any provision established. The schedule shall include:

(1) The name(s) of the owner(s) for all components of the system.
(2) The names and addresses of the person(s) responsible for operation, maintenance, and regular inspections.
(3) The names and addresses of the person(s) responsible for financing maintenance and emergency repairs.
(4) An inspection and maintenance schedule for all drainage structures, including swales and ponds.
(5) The signature(s) of the owner(s).
(6) A list of easements with the purpose of each and a plan showing the location of each.
(7) Stormwater management easements as necessary for:
    (a) Access for facility inspections and maintenance.
    (b) Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event.
    (c) Direct maintenance access by heavy equipment to structures requiring regular cleanout.
(8) Stormwater management easement requirements:
    (a) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
    (b) Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Town.
    (c) Easements shall be recorded with the Registry of Deeds prior to issuance of a Certificate of Completion.
(9) Changes to Operation and Maintenance Plans
    (a) The owner(s) of the stormwater management system must notify the Office of Planning and Engineering of changes in ownership or assignment of financial responsibility.
    (b) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this by-law by mutual agreement of the Office of Planning and Engineering and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties must include owner(s), persons with financial responsibility, and persons with operational responsibility.

9.1.2 The schedule shall also provide that, if after notice by the Town Engineer to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within thirty days, the Office of Planning and Engineering may perform all necessary work to place the facility in proper working condition. The owner(s) of the facility shall be assessed the cost of the work and any penalties.

9.2 Maintenance Responsibility

9.2.1 The owner of the property on which work has been done pursuant to this By-Law 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 sediment control measures, riprap and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.

9.2.2 A maintenance schedule shall be developed for the life of any stormwater management facility and shall state the maintenance to be completed, the time period for completion, and who shall be legally responsible to perform the maintenance. This maintenance schedule shall be printed on the stormwater management plan.

9.2.3 Records of installation and maintenance performed on stormwater management facilities shall be maintained with the maintenance schedule.

9.2.4 If failure to maintain BMPs results in the need for the Office of Planning and Engineering to perform all necessary work to place the facility in proper working condition, then the owner(s) of the facility shall be assessed the cost of the work and any penalties.

SECTION X. DISCHARGE PROHIBITIONS

10.1 Prohibition of Illegal Discharges

No person shall discharge or cause to be discharged into the municipally owned separate storm sewer 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 stormwater.

The commencement, conduct or continuance of any illegal discharge to the municipally owned separate storm sewer system is prohibited except those discharges described as follows:

10.1.1 Unpolluted discharges from water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, 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, dechlorinated swimming pool water, and fire fighting activities.

10.1.2 Discharges specified in writing by the Milford Office of Planning and Engineering as being necessary to protect public health and safety.

10.1.3 Dye testing with verbal notification to the Milford Office of Planning and Engineering 24 hours prior to the test.

10.1.4 Any non-stormwater 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.

10.2 Prohibition of Illicit Connections

10.2.1 The construction, use, maintenance or continued existence of illicit connections to the municipally owned separate storm sewer system is prohibited.

10.2.2 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.

10.2.3 A person is considered to be in violation of this By-Law if the person connects a pipeline conveying sewage into the municipally owned separate storm sewer system, or allows such a connection to continue.

10.2.4 Upon written notification by the Town of Milford, a person who has an illicit connection to the municipally owned storm sewer shall at his own expense remove said illicit connection as soon as possible or be subject to penalties as specified in Section XII herein.

10.3 Waste Disposal Prohibitions

No person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, left, or maintained, in or upon any public or private property, driveway, parking area, street, alley, sidewalk, component of the storm drain system, or water of the U.S., any refuse, rubbish, garbage, litter, lawn/garden wastes or other discarded or abandoned objects, articles, and accumulations, so that the same may cause or contribute to pollution. Wastes deposited in proper waste receptacles for the purposes of collection are exempted from this prohibition.

SECTION XI. PERFORMANCE GUARANTEE

The Office of Planning and Engineering may require from the developer a cash escrow or other means of security acceptable to the Office of Planning and Engineering prior to the issuance of any building permit for the construction of a development requiring a stormwater management facility. The amount of the security shall not be less than the total estimated construction cost of the stormwater management facility. The guarantee so required in this section shall include provisions relative to forfeiture for failure to complete work specified in the approved stormwater management plan, compliance with all of the provisions of this By-Law and other applicable laws and regulations, and any time limitations. The guarantee shall not be fully released without a final inspection of the completed work by the Town Engineer, submission of "As-built" plans, and certification of completion by the Office of Planning and Engineering of the stormwater management facilities being in compliance with the approved plan and the provisions of this By-Law. When a performance guarantee is supplied by the applicant as part of a subdivision, the principal held by the Planning Board may be increased by the amount determined by the Office of Planning and Engineering instead of the Office of Planning and Engineering holding a separate performance guarantee, to avoid the double funding of projects and to avoid the added cost of carrying two performance guarantees. If the applicant chooses such a combined guarantee, the Planning Board shall not release or reduce the security without written approval of the Office of Planning and Engineering.

SECTION XII. ENFORCEMENT AND PENALTIES

12.1 Violations

Any activity that has commenced or is conducted contrary to this By-Law may be restrained by injunction or otherwise abated in a manner provided by law.

12.2 Notice of Violation

When the Milford Office of Planning and Engineering determines that an activity is not being carried out in accordance with the requirements of this By-Law, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

A. The name and address of the owner/applicant;
B. The address when available or the description of the building, structure, or land upon which the violation is occurring;
C. A statement specifying the nature of the violation;
D. A description of the remedial measures necessary to bring the activity into compliance with this By-Law and a time schedule for the completion of such remedial action;
E. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
F. A statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

12.3 Stop Work Orders

Persons receiving a notice of violation will be required to halt all construction activities, if applicable. This "stop work order" will be in effect until the Milford Office of Planning and Engineering confirms that the development activity is in compliance with this By-Law and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this By-Law.

12.4 Criminal and Civil Penalties

Any person who violates any provision of this by-law, regulations thereunder, or permits issued thereunder, shall be punished by a fine of not more than $300. Each day or portion thereof during which the violation continues shall constitute a separate offense, and each provision of the by-law, regulations, or permit violated, shall constitute a separate offense.

12.5 Restoration of Lands

Any person deemed to be a violator of this By-Law may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time

after notice, the Milford Office of Planning and Engineering may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

SECTION XIII. SEVERABILITY

The invalidity of any section or provision of this By-Law shall not invalidate any other section or provision thereof.

***

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 Milford

EPA NPDES Permit Number: MAR041135

Primary MS4 Program Manager Contact Information

Name: Scott Crisafulli Title: Highway Surveyor

Street Address Line 1: 30 Front Street

Street Address Line 2:

City: Milford State: MA Zip Code: 01757

Email: SCrisafulli@townofmilford.com Phone Number: (508) 473-1274

Fax Number: (508) 634-2348

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.milfordma.gov/sites/milfordma/files/uploads/town_of_milford_stormwater_management_plan_for_comments.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)*

Charles River Watershed Phosphorus TMDL

- ☐ Begin Phase 1 Phosphorus Control Plan (PCP)

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:

The Town is in the beginning stages of reviewing and preparing the Phase 1 Phosphorus Control Plan, and will continue developing this plan in Year 2.

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 IDDE Investigations conducted in September, 2019, six outfalls were determined to not be MS4 Outfalls. Therefore, there are 193 MS4 Outfalls in Milford, rather than 199 outfalls as previously understood.

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: 12

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:Proper Stormwater Management

Message Description and Distribution Method:

Website post "The Scoop on Stormwater" video and flyer was developed to educate on proper stormwater management techniques

Targeted Audience: Residents

Responsible Department/Parties: Planning and Engineering Department, Highway Department

Measurable Goal(s):

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

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:

BMP:Pet Waste

Message Description and Distribution Method:

Brochures and pamphlets were developed to educate on proper pet waste management techniques

Targeted Audience: Residents

Responsible Department/Parties: Town Engineer and Town Clerk

Measurable Goal(s):

Distribute annual messaging in accordance with the Town’s Bacteria and Pathogens TMDL

Message Date(s): Spring and 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:

BMP:Stormwater Management

Message Description and Distribution Method:

Brochures and pamphlets were developed to educate on proper stormwater management techniques

Targeted Audience: Businesses, Institutions and Commercial Facilities

Responsible Department/Parties: Planning and Engineering Department, Highway Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 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:

BMP:Posters and Displays

Message Description and Distribution Method:

Educational posters and displays with stormwater information were posted in schools, libraries and Town hall

Targeted Audience: Businesses, Institutions and Commercial Facilities

Responsible Department/Parties: Planning and Engineering Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 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:

BMP:Stormwater Pollution

Message Description and Distribution Method:

Brochures and pamphlets on stormwater pollution and proper management on new and redevelopments were distributed

Targeted Audience: Developers

Responsible Department/Parties: Planning and Engineering Department, Highway Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 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:

BMP:Educational Posters

Message Description and Distribution Method:

Posters and displays with educational stormwater information were displayed in schools, libraries and Town hall

Targeted Audience: Developers

Responsible Department/Parties: Planning and Engineering Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 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:

BMP:Brochures and Pamphlets

Message Description and Distribution Method:

Brochures and pamphlets were sent out for the required stormwater management regulations and appropriate BMPs

Targeted Audience: Industrial Facilities

Responsible Department/Parties: Planning and Engineering Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 2022

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:Posters and Displays

Message Description and Distribution Method:

Educational posters and displays were posted in schools, libraries and Town hall with stormwater information

Targeted Audience: Industrial Facilities

Responsible Department/Parties: Planning and Engineering Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 2022

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:Proper Management of Pet Waste

Message Description and Distribution Method:

Messages were sent to pet license holders on an annual basis.

Targeted Audience: Residents

Responsible Department/Parties: Town Engineer and Town Clerk

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Bacteria and Pathogens TMDL

Message Date(s): Spring and Fall 2022

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:Proper Maintenance of Septic Systems

Message Description and Distribution Method:

Brochures and pamphlets were sent out regarding the maintenance of septic systems.

Targeted Audience: Residents

Responsible Department/Parties: Board of Health and Town Engineer

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Bacteria and Pathogens TMDL

Message Date(s): Spring and Fall 2022

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:Proper Use and Disposal of Grass Clippings and Proper Use of Fertilizers

Message Description and Distribution Method:

Spring messaging

Targeted Audience: Residents

Responsible Department/Parties: Planning and Engineering Department and Highway Department

Measurable Goal(s):

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

Message Date(s): Spring and Fall 2023

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:Proper Disposal of Leaf Litter

Message Description and Distribution Method:

Fall messaging from the Highway Department

Targeted Audience: Residents

Responsible Department/Parties: Highway Department - Engineering

Measurable Goal(s):

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

Message Date(s): Spring and Fall 2023

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 SWMP, 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:

Supported shoreline clean-ups along the Charles River, semi-annual hazardous waste collection days (November 3, 2018) and recycling advertising.
Public forums were held on May 15, 2018 and May 23, 2018 for residents interested in learning more about stormwater.

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: 10

Total number of SSOs removed: 10

MS4 System Mapping

Describe the status of your MS4 map, including any progress made during the reporting period (phase I map due in year 2):

The Town of Milford has completed the following updates to its stormwater mapping to meet the Phase I requirements:
- Outfalls and receiving waters
- Open channel conveyances (swales, ditches, etc.)
- 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 (taken from USGS/MassDEP Hydrography data updated April 2017)
- Initial catchment delineations. Any available system data and topographic information may be used to produce initial catchment delineations (attached as Appendix C and further developed in Section 5.1)

During Year 2, the following stormwater Phase 1 mapping will be completed:
- Interconnections with other MS4s and other storm sewer systems
- Open channel conveyances

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: 0

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

Percent of total outfalls screened: 59%

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:

The Town hired a consultant to perform outfall screening in August 2019 (Year 2). These results will be provided in the Year 2 annual report.

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 [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: 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:

N/A

Employee Training

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

Annual IDDE implementation training.

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: 22

Number of inspections completed: 30

Number of enforcement actions taken: 15

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:

To be completed in Year 2.

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:

To be completed in Year 2.

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:

To be completed 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:

To be completed 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:

To be completed in Year 4.

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

Contractor hired to clean all catch basins every August. The Town cleans basins in low lying areas itself after s

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: 3,429

Number of catch basins cleaned: 3,424

Total volume or mass of material removed from all catch basins: 250 cubic yards

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

Total number of catch basins: 3424

If applicable:

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

The Town cleans basins in low lying areas itself after significant rain fall events, which is approximately 10% of all basins

Street Sweeping

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

All streets are swept twice between April 1st and November 1st. Downtown and the surrounding streets are swept weekly, and streets that need sweeping after significant rain get done more often. Parking lots get swept 1 time per year.

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

- ○ Number of miles cleaned: 356
- ○ Volume of material removed: 450 Cubic Yards
- ◉ Weight of material removed: 500 Tons

If applicable:

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

Uncurbed roadways are included in the Town's regular sweeping program.

Winter Road Maintenance

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

The Town has moved towards a straight salt status with sand only used in extreme, icy conditions. Sand accounts for approximately 10% of material used during icy weather. All trucks have on-board liquid sprayers that coat material as it leaves the truck. The Towns has not started a pretreating program at this time; it does not pretreat with salt. All its salt is stored in a salt shed that holds approximately 1,400 cubic yards. The liquid ice melts are stored in 2,000-2,500 gallon plastic tanks. The Town uses different ice melting liquids, all of which use a mixture of calcium and other products. Its clean sand is stored outside and is mixed with salt as needed in the salt shed.

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:

To be completed in Year 2.

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:

To be completed in Year 2.

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:

To be completed in Year 2.

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:

Town currently uses a field procedure for BMP operation & maintenance. The written procedure will be completed by Year 2.

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:

During this reporting period, Milford 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.

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 of Milford has contracted a consulting company to complete the following work in Year 2:
- Perform IDDE Investigation of outfall screenings during dry weather conditions and recorded information including outfall diameter, material, condition, connectivity, receiving water, and flow and sediment notes. For those outfalls that are 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, as well as additional parameters required based on waterbody or watershed impairments and TMDLs.
- Perform IDDE Investigations of outfall screenings during wet weather conditions. The consultants will visit 15 outfalls identified as highest ranked in the IDDE ranking table. The same field and laboratory parameters will be tested for as stated previously in the dry weather outfall sampling.
- Inspect up to 10 town-owned facilities for potential contributions to illicit stormwater discharge.
- Complete Phase 1 mapping updates.

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: Title:

Signature: Date:

[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 Milford

EPA NPDES Permit Number: MAR041135

Primary MS4 Program Manager Contact Information

Name: Scott Crisafulli Title: Highway Surveyor

Street Address Line 1: 30 Front Street

Street Address Line 2:

City: Milford State: MA Zip Code: 01757

Email: SCrisafulli@townofmilford.com Phone Number: (508) 473-1274

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.milfordma.gov/sites/g/files/vyhlif3466/f/uploads/town_of_milford_stormwater_management_plan_for_comments.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:

Changes to any by-laws (storm water, zoning, subdivision, etc.) requires a warrant article to be passed at Town Meeting. Due to Covid - 19, the Annual / Special Town Meeting Warrant Articles have been minimized to articles that are essential to keep the town operating, such as budgets / financial articles.

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:

The annual IDDE training was delayed due to COVID-19 concerns but completed prior to the Year 2 Annual Report deadline.

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:

Educational material to dog owners coordinated with the renewal and/or issuance of dog license still needs to

be completed.

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:

The Town has been working with the Charles River Watershed Association (CRWSA) in analyzing the watershed areas, sub-watershed areas (of the Town) and the amounts of Phosphorous associated with the Watersheds. In working with the CRWA, there is a current "Green Stormwater Infrastructure in Milford Town Park" Project underway. The project is in the design phase.

Charles River Watershed Phosphorus TMDL

- ☐ Completed Legal Analysis

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:

Legal analysis is underway. Planning on completing analysis in Year 3.

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

N/A

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:

The 2016 Integrated List of Waters was released in Year 2 to replace the 2014 Integrated List of Waters. Impairments from one water body were updated: the Charles River segment MA72-01 now has new dewatering and flow regime alterations impairments.

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**: 2

*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:Proper Stormwater Management

Message Description and Distribution Method:

"The Scoop on Stormwater" video and flyer were posted to the Town of Milford's website to educate residents on proper stormwater management techniques. Original post from the EPA.

Targeted Audience: Residents

Responsible Department/Parties: Planning and Engineering Department, Highway Department

Measurable Goal(s):

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

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:

BMP:Pet Waste

Message Description and Distribution Method:

Brochures and pamphlets were developed to educate residents on proper pet waste management techniques.

Targeted Audience: Residents

Responsible Department/Parties: Town Engineer and Town Clerk

Measurable Goal(s):

Distribute annual messaging in accordance with the Town’s Bacteria and Pathogens TMDL.

Message Date(s): Spring 2020 and 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:

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 SWMP. Plan is posted on the Town of Milford's website with a public comment form.

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**:

Supported shoreline clean-ups along the Charles River, hosted semi-annual hazardous waste collection days, and ran recycling advertising.

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:

Open channel conveyances were previously mapped; updates to open channel conveyances and interconnection mapping was started during this reporting period and have since been completed.

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: 47

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**:

Annual IDDE employee training was delayed due to COVID-19 concerns. However, it was completed before this Annual Report submission.

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: 20

Number of inspections completed: 125

Number of enforcement actions taken: 0

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

Number of Inspections completed: this 125 number represents all inspectioins performed by the engineering department, including septic systems, construction sites, wetlands, etc.

Enforcement Actions: In place of enforcement actions, there has been 10's of directives / communications (via email, phone calls, direct verbal communication on site) to address the management of construction sites.

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:

Required as part of the Subdivision Regulations under Form E - Conditional Approval Contract
Required under Orders of Conditions issued by the Conservation Commission, typically triggered by a Notice of Intent filing (NOI)

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:

To be completed 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:

To be completed 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:

To be completed in 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: 3,424

Number of catch basins cleaned: 3,424

Total volume or mass of material removed from all catch basins: 350 tons

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

Total number of catch basins: 3,424

If applicable:

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

The Town cleans basins in low lying areas after significant rain fall events, which is approximately 10% of all basins.

Street Sweeping

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

- ○ Number of miles cleaned: 120
- ○ Volume of material removed: [Select Units]
- ◉ Weight of material removed: 180 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: 41

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

Approximate number of visits 41 - corrective Actions or directives include re-install erosion control, silt fence, silt sacks, clean / sweep streets, etc.

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:

The Town of Milford continuously tries to improve by:
Becoming a certified MVP community, partnering with the Charles River Watershed Association (CRWA) to help in analyzing the towns watershed areas and sub watersheds to better understand the phosphorous generators which in turn will put the Town in a better position to build BMP's in the proper areas with higher pollutants therefore being more effective.

Planning:
• Updated the Local 5-year Capital Plan and re-prioritized the Capital Improvement Projects. Moving the section of Godfrey Brook from West Street to Water Street as a high priority project. The project includes the design and construction to alleviate repetitive flooding in this area.
• Currently seeking a grant from FEMA for the project associated with Godfrey Brook from West Street to Water Street.
• The Town is currently soliciting bids to analyze the dam located at the outlet of Cedar Swamp Pond (AKA Milford Pond Dam). This next phase stems from a Phase I report that lists recommendations to improve the overall condition of the dam. Recently completed an Emergency Action Plan (EAP) for this Dam.
• Milford water company recently update the Emergency Action Plan for Echo Lake Dam (this is not a Town owned dam).
• Recently completed an Emergency Action Plan for Louisa Lake Dam (EAP).
• Continued efforts in mapping the Towns drainage system, larger watersheds and sub-water sheds to better understand flooding impacts and pollutant loading. Some of this work has been done in conjunction with the Charles River Watershed Association (CRWSA) utilizing local funding and 604B Grant funding.
Actively applying for Grants from the State of Massachusetts.

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:

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: Title:

Signature: Date:

[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 Milford

EPA NPDES Permit Number: MAR041135

Primary MS4 Program Manager Contact Information

Name: Scott Crisafulli Title: Highway Surveyor

Street Address Line 1: 30 Front Street

Street Address Line 2: N/A

City: Milford State: MA Zip Code: 01757

Email: SCrisafulli@townofmilford.com Phone Number: (508) 473-1274

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.milfordma.gov/sites/g/files/vyhlif3466/f/uploads/town_of_milford_stormwater_management_plan_for_comments.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:

The Town of Milford has screened all outfalls and interconnections except eight (8) outfalls that discharge into a culverted section of the Charles River. The Town is in the process of contracting with field staff trained to enter culverts.

Updates to the outfall/interconnection priority ranking was completed in August 2021.

A consulting company reviewed the Town's post-constructed stormwater bylaws. The Town is in the process of developing revisions to those bylaws.

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:

The annual IDDE training was delayed due to COVID-19, but has been scheduled.

The Town has temporarily stored a salt stockpile outside their Salt Shed. The Salt Shed requires a new roof that will be completed in fall 2021, at which time all the salt will be stored fully enclosed in the Salt Shed.

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:

The Town is working on a program in order to provide educational materials to dog owners at the time of issuance or renewal of dog licenses. Currently, the Town posts dog waste information and dog waste bags at parks, fields, and bike paths throughout Town.

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 Charles River Watershed Association (CRWA) developed a Subwatershed Restoration Plan for Milford, published on December 30, 2020. Additionally, the Town is working on their own Phosphorus Control Plan.

Charles River Watershed Phosphorus TMDL

☒ Completed the funding source assessment

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:

As mentioned above, the Town is working on their own Phosphorus Control Plan that includes an estimated budget for compliance with the Phosphorus TMDL requirements. Additionally, the Town is in the process of evaluating the implementation of a stormwater user fee that can acquire more funds to be used partially for this work.

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

N/A

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:

The Town's MS4 outfall inventory was 199 outfalls on their NOI. After conducting dry weather screenings and mapping updates this year, the new outfall inventory is 248 outfalls.

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**: 6

*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: Proper Stormwater Management

Message Description and Distribution Method:

"The Scoop on Stormwater" video and flyer were posted to the Town of Milford's website to educate residents on proper stormwater management techniques. Original post from the EPA.

Targeted Audience: Residents

Responsible Department/Parties: Planning and Engineering Department, Highway Department

Measurable Goal(s):

Distribute at least two educational messages within the permit term.

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

BMP: Stormwater Education for Students

Message Description and Distribution Method:

The Charles River Watershed Association (CRWA) presented about the Milford Town Park Green Stormwater Infrastructure project to over 1,000 students at the Stacy Middle School. Students learned what a watershed was, where they are located within the Charles River Watershed, and about how stormwater runoff brings pollution into the river, degrading water quality. They also learned about the nature-based solution to this pollution, green stormwater infrastructure, how it works, and that it would be installed in their local park.

Targeted Audience: Residents

Responsible Department/Parties: The Town of Milford, The CRWA

Measurable Goal(s):

Distribute at least two educational messages within the permit term.

Involve the community in the development of the Milford Town Park Green Stormwater Infrastructure project.

Message Date(s): 5/28/21

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:

This outreach arose during the development of the Town Park Green Stormwater Infrastructure project.

BMP: Winter Proper Salt Use Method

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook regarding the proper storage and application rates of winter deicing material.

Targeted Audience: Residents

Responsible Department/Parties: Think Blue Massachusetts and the Town of Milford

Measurable Goal(s):

Distribute at least 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 to supplement outreach already listed on Milford's NOI.

BMP: Spring Leaf Clippings & Fertilizer Use

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: Residents

Responsible Department/Parties: Think Blue Massachusetts and the Town of Milford

Measurable Goal(s):

Distributed in accordance with the Town of Milford's phosphorus TMDL and impairment requirements.

Message Date(s): 4/1/21, 4/6/21, 4/7/21, 4/8/21, 4/9/21, 4/15/21

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: Summer Dog Waste Message

Message Description and Distribution Method:

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

Targeted Audience: Residents

Responsible Department/Parties: Think Blue Massachusetts and the Town of Milford

Measurable Goal(s):

Distributed in accordance with the Town of Milford's phosphorus and bacteria/pathogens TMDL and impairment requirements.

Message Date(s): 3/16/21, 3/30/21, 4/15/21, 4/20/21, 6/17/21, 6/30/21

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: Fall Leaf Litter Message

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook in fall to encourage proper management of leaf litter.

Targeted Audience: Residents

Responsible Department/Parties: Think Blue Massachusetts and the Town of Milford

Measurable Goal(s):

Distributed in accordance with the Town of Milford's phosphorus TMDL and impairment requirements.

Message Date(s): 10/5/20

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: Septic System 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: Think Blue Massachusetts and the Town of Milford

Measurable Goal(s):

Distributed in accordance with the Town of Milford'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

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 SWMP. Plan is posted on the Town of Milford's website with a public comment form.

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**:

Milford supported shoreline clean-ups along the Charles River, hosted semi-annual hazardous waste collection days, and ran recycling advertising.

To celebrate Earth Day 2021, the Milford Republican Town Committee held a Plant-a-Tree seeding sale at Plains Park Pavilion on Saturday April 24. Also on this day, the Town hosted its sixth annual Town Earth Day Beautification Day, where volunteers picked up litter in the downtown area. Over 100 people volunteered.

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:

Mapping of outfalls, open channel conveyances, interconnections, and BMPs were refined during Year 3. Open channel conveyances, interconnections, and BMPs were field-verified.

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: 68

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

Percent of outfalls screened: 97

Optional: Provide additional information regarding your outfall/interconnection screening:

10 interconnections were screened and 58 outfalls were screened in Year 3. Of the 248 outfalls within the MS4 area of Milford, 240 have been screened. Eight outfalls remain that discharge to a culverted section of the Charles River. The Town is in the process of contracting field staff to screen those remaining outfalls.

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: 2

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

5 catchments were investigated during August 2021.

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:

N/A

Employee Training

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

Annual IDDE employee training was delayed due to COVID-19. However, it has been scheduled.

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: 28

Number of inspections completed: 140

Number of enforcement actions taken: 50

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

Site inspections conducted were a mix of new construction, redevelopment projects, erosion control, and septic system installations.

The Planning and Engineering Department issued at least 50 directives and communications to construction site projects.

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: 25

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:

To be completed 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:

To be completed 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:

To be completed in 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: 3,425

Number of catch basins cleaned: 3,425

Total volume or mass of material removed from all catch basins: 344.29 tons

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

Total number of catch basins: 3,811

If applicable:

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

The Town cleans basins in low lying areas after significant rain fall events, which is approximately 10% of all basins.

Street Sweeping

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

- ○ Number of miles cleaned:
- ○ Volume of material removed: [Select Units]
- ◉ Weight of material removed: 167.41 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: 4

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):

https://www.crwa.org/uploads/1/2/6/7/126781580/crwa_subwatershed_restoration_plan_12-30-20.pdf

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:

The Charles River Watershed Association developed a Subwatershed Restoration Plan for Milford, MA, published on December 30, 2020.

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 Highway Department installed, rebuilt, or repaired 189 catch basins. Also, they installed or rebuilt drainage totaling 4,230 linear feet of variously sized pipe.

The Town removed 8,880 cubic yards of leaves during their annual leaf pickup program.

The Town of Milford was awarded nearly $500,000 as part of a climate resiliency grant with the Charles River Watershed Association. With these funds, green infrastructure - including 2 rain gardens and an infiltration chamber - will be installed at Milford's Town Park. Construction is set to begin in 2022. Attached to this annual report is a project summary.

In Year 3, the Town received funds from the Federal Emergency Management Agency (FEMA) to expand the capacity of Godfrey Brook, a tributary to the Charles River, build resiliency, and restore the brook. Funds from FEMA were matched by the Town, totaling approximately $1 million. The project area spans from Water Street to West Street.

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:

N/A

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:

The Town started drafting a Phosphorus Control Plan in Year 3, which will be further refined in Year 4.

Additionally, the Town began evaluating the implementation of a stormwater user fee, that will be further investigated in Year 4.

As always, the Town will continue its efforts to apply for grants and other sources of funds to be able to complete more stormwater projects going forward.

The Town has hired a consulting company to record a presentation covering the importance of stormwater and the Town's stormwater program to be run on a local TV channel for public education and involvement.

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:	Scott J. Crisafulli	Title:	Highway Surveyor
Signature:	Scott J. Crisafulli Digitally signed by Scott J. Crisafulli Date: 2021.09.28 10:49:33 -04'00'	Date:	09/28/2021

[Signatory may be a duly authorized representative]

APPENDIX J

Minimum Control Measures BMPs

Town of Milford, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Charles River (MA72-03) - Phosphorus TMDL

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
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.	Highway Department	Distribute required messages each year	2019
R2	**Stormwater Management in New Development and Redevelopment**	Include requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.	Highway Department	Incorporate TMDL into new stormwater regulations	2019
R3	**Good House Keeping and Pollution Prevention for Permittee Owned Operations**	Establish procedures to properly manage frass cutting and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces; increased street sweeping frequancy of all municipal owned streets and parking lots to a minimum of two times a year, onces in the spring and at least once in the fall.	Highway Department	Establish procedures for dealing with waste produced on permittee owned properties	2019
R4	**Phosphorus Source Identification Report**	Complete a Phosphorus Source Identification Report.	Highway Department	Complete within 4 years of the permit effective date	2019
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.	Highway Department	Complete within 5 years of the permit effective date	2019

Town of Milford, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Charles River Watershed & Charles River (MA72-03) - Bacteria and Pathogens TMDL

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**Public Education and Outreach**	Distribute annual message encouraging the proper management of pet waste	Highway Department	Distribute annual message encouraging the proper management of pet waste	2019
		Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a bacteria or pathogen impaired waterbody		Provide septic maintenance information to septic contractors to distribute to residents.	2019
R2	**Illicit Discharge**	Prioritize catchment areas	Highway Department	Complete within 1 year of the effective date of permit and update as required	2019

Town of Milford, Massachusetts

MA MS4 General Permit - Water Quality Impairments

Charles River Watershed Phosphorus TMDL

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1.1	**Phosphorus Control Plan (PCP) - Phase 1**	Phase 1 shall be developed within 1-5 years of permit effective date and implemented by Year 5. Legal analysis shall be completed within 2 years of permit effective date. Funding assessment shall be completed within 3 years of permit effective date. Requirement shall be completed within 4 years of permit effective date.	Highway Department	Add PCP as an attachment to SWMP when complete, and submit yearly progress reports with each annual report.	2019
R1.2	**Phosphorus Control Plan - Phases 2&3**	Phase 2 will be implemented within 10-15 years of permit effective date. Phase 3 shall be implemented within 15-20 years.	Highway Department	Add PCP as an attachment to SWMP when complete.	2029

APPENDIX K

Operation and Maintenance (O&M) Plan

STORMWATER MS4
OPERATIONS & MAINTENANCE PLAN

Town of Milford

June 2020
Revised November 2020

ENVIRONMENTAL PARTNERS

Stormwater MS4 Operations & Maintenance (O&M) Plan Revision History

MS4 Materials that supplement the 2020 O&M Plan Document

Revision #	Date	Comments
0	6/2020	O&M Published for Highway Department Comment
1	11/17/2020	O&M Updated With Revisions from Highway Department

"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 Scott J. Crisafulli

Signature Scott J. Crisafulli Date 1-6-21

ENVIRONMENTAL PARTNERS

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Attachment 1: Town of Milford Mapbook

SECTION 1 INTRODUCTION

This Stormwater Operation & Maintenance (O&M) Plan has been prepared by the Town of Milford to address stormwater infrastructure O&M requirements (Part 2.3.7.a.iii) of the 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."

This O&M Plan addresses Minimum Control Measure 6, Good Housekeeping and Pollution Prevention for Permittee Owned Operations, by describing the activities and procedures the Town of Milford will implement so that the MS4 infrastructure is maintained in a timely manner to reduce the discharge of pollutants from the MS4. The O&M Plan outlines inspection and maintenance procedures for catch basins, municipally-owned streets, facilities, and parking lots, and stormwater Best Management Practices.

The O&M Plan for the Town of Milford also establishes procedures to address the proper use, storage and disposal of pesticides, herbicides and fertilizers. It includes recommendations for proper lawn maintenance and disposal of grass clippings and other vegetative waste at Open Spaces and Parks maintained by the Town. The Plan includes a description of structural and non-structural BMP's under municipal control as well as recommended maintenance schedules and operations for all municipal stormwater structures.

Inspection form templates are included to record observations and corrective actions taken for specific BMP's. The completed inspection forms should be kept on file for a minimum of 3 years and the information used to update the O&M Plan as necessary. For example, if a particular catch basin is scheduled for annual inspection / cleaning and is consistently found to contain accumulated sediments to within one (1) foot of the outlet, the inspection frequency should be revised accordingly. Information obtained from prior maintenance activities, inspection reports, citizen complaints as well as reports provided by Town departments and regulatory boards such as the Conservation Commission among others, will be used to determine the appropriate priority level.

The O&M Plan reflects the current processes for Town operations, and its use is applied throughout the Department, as listed below:

Department	Supervisor
Highway	Scott Crisafulli
Parks	James Asam
Planning & Engineering	Michael Dean, Larry L. Dunkin
Trees	Charles Reneau

SECTION 2 PERMIT REQUIREMENT ELEMENTS

The Permit details the requirements of an O&M Plan for stormwater infrastructure and includes the elements listed in Section 2.3.7.a.ii.1 and Sections 2.3.7.a.iii through 2.4.7.a.v of the Permit, as detailed below. Typically Town-owned facilities include parks and open space, buildings and facilities, and vehicles and equipment. The items below detail individual elements associated with each facility that can either affect stormwater quality or specifically treat stormwater generated by these facilities. EPA Maps and corresponding TMDL Data are attached to this report as Appendix A.

- **Fertilizer Use, Storage, and Disposal** – "establish procedures to address the proper use, storage, and disposal of pesticides, herbicides, and fertilizers including minimizing the use of these products and using only in accordance manufacturer's instruction."
- **Lawn and Landscaping Maintenance** – "evaluate lawn maintenance and landscaping activities to ensure practices are protective of water quality. Protective practices include reduced mowing frequencies, proper disposal of lawn clippings, and use of alternative landscaping materials (e.g. drought resistant planting)."
- **Public Trash Receptacles and Pet Waste Storage** – "establish pet waste handling collection and disposal locations at all parks and open space where pets are permitted, including the placing of proper signage concerning the proper collection and disposal of pet waste… Establish procedures for management of trash containers at parks and open space (scheduled cleanings; sufficient number)."
- **Catch Basin Cleaning Program** – "the permittee shall optimize routine inspections, cleaning and maintenance of catch basins such that the following conditions are met:
    - …prioritize inspection and maintenance for catch basins near construction activities…
    - …establish a schedule with a goal that the frequency of routine cleaning will ensure that no catch basin at any time will be more than 50 percent full.
    - …if a catch basin sump is more than 50 percent full during two consecutive routine inspections/cleaning events, …document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and…abate contributing sources.
    - … [Consider] an excessive sediment or debris loading as a catch basin sump more than 50 percent full…
    - …document in the SWMP and in the first annual report [the permittee's] plan for optimizing catch basin cleaning, inspection plans, or its schedule for gathering information to develop the optimization plan…
    - …report in each annual report the total number of catch basins, number inspected, number cleaned, and the total volume or mass of material removed from all catch basins."
- **Street Sweeping Program** – "the permittee shall establish and implement procedures for sweeping and/or cleaning streets, and permittee-owned parking lots… The procedures shall also include more frequent sweeping of targeted areas determined by the permittee on the basis of pollutant load reduction potential, based on inspections, pollutant loads, catch basin cleaning or inspection results, land use, water quality limited or TMDL waters or other relevant factors as determined by the permittee…The permittee shall report in each annual report the

number of miles cleaned and the volume or mass of material removed."

- **BMP Maintenance & Inspection Procedures** –"the permittee shall establish and implement inspection and maintenance frequencies and procedures for all stormwater treatment structures such as water quality swales, retention/detention basins, infiltration structures, proprietary treatment devices or other similar structures. All permittee-owned stormwater treatment structures (excluding catch basins) shall be inspected annually at a minimum."
- **Storage of Catch Basin Cleanings & Street Sweepings** – "the permittee shall ensure proper storage of catch basin cleanings and street sweepings prior to disposal or reuse such that they do not discharge to receiving waters."
- **Winter Road Maintenance** – "the permittee shall establish and implement procedures for winter road maintenance including the use and storage of salt and sand; minimize the use of sodium chloride and other salts, and evaluate opportunities for use of alternative materials; and ensure that snow disposal activities do not result in disposal of snow into waters of the United States…"
- **Vehicles and Equipment** – "establish procedures for the storage of permittee owned vehicles. Establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters…"
- **Facility Audit** – "evaluate the use, storage and disposal of petroleum products and other potential stormwater pollutants… Develop management procedures for dumpsters and other waste management equipment. Sweep parking lots and keep areas surrounding facilities clean to reduce runoff of pollutants."
- **Reporting** – "the permittee shall report in the annual report on the status of the inventory required by this part and any subsequent updates; the status of the O&M programs… and the maintenance activities associated with each…the permittee shall keep a written record of all required activities but not limited to maintenance activities, inspections and training…"

SECTION 3 FERTILIZER USE, STORAGE, AND DISPOSAL

The Town's subcontractors maintain its public spaces and parks. The list of public facilities currently maintained by the subcontractors include: Town Hall, Transfer Station, Highway Office, Milford Town Library, Milford Fire Department, Milford Police Department, Ruth Anne Bleakney Senior Center, Milford Youth Center, Milford Center Nursing Home, Animal Control/Dog Kennel, School Department Central Office at Milford High School, Memorial Elementary School, Brookside Elementary School, Woodland Elementary School, Stacy Middle School, Milford Housing Authority, Milford Wastewater Treatment Plant, Upper Charles Trail Parking Areas (3), Votolato Field, Fino Field & Annex, Memorial Pool, Louisa Lake Recreational Area, Plains Park, Rosenfeld Field, Inglesi Field, Vernon Field, Tank Field, Tomaso Field, Town Park, Draper Memorial Park, and Prospect Heights Park (see attached Figure 1).

3.1 CURRENT FERTILIZER USE

The Town's subcontractor currently uses fertilizers at Milford High School, Town Park, Fino Field, and Plains Park. The subcontractor uses a fertilizer containing magnesium, potassium chloride, and urea, and typically purchases it and sprays it the day of purchase. The remaining public parks and spaces do not receive fertilizer treatment. They do not use any herbicides or pesticides.

The Town is consistently reviewing its operation and usage of these chemicals, looking for ways to reduce the use, and to ensure that it is always applied in accordance with the manufacturer's instructions.

All fertilizer applications should conform to the requirements outlined in 330 CMR 31.00 Plant Nutrient Application Requirements for Agricultural Land and Non-Agricultural Turf and Lawns. The purpose of this regulation is to ensure that municipalities limit non-point source pollutants from entering the surface and groundwater resources of the Commonwealth as well as minimizing the impacts of nutrients on water resources to protect human health and safety. This Regulation also references the University of Massachusetts Amherst Extension Service guidelines for fertilizer applications. With regard to fertilizer applications, 330 CMR 31.00 includes the following requirements:

- Apply fertilizers and nutrients consistent with University of Massachusetts Extension Service guidelines for turf.
- Do not apply fertilizers or nutrients to surface waters, saturated soils, flooded soils, or frozen soils.
- Do not apply fertilizers within 100 feet of surface waters used for public water supplies.
- Do not apply fertilizers within a Zone I of a public Water Supply Well.
- Apply fertilizers using a broadcast method outside of 20 feet of Surface Waters.
- Apply fertilizers using a drop spreader or rotary spreader with a deflector or targeted spray within ten feet of Surface Waters.
- Do not apply fertilizers to impervious areas.
- Do not apply fertilizers for de-icing purposes.
- Do not apply fertilizers to drought dormant, cold dormant, inactive, or brown turf.

- Do not apply fertilizers containing Phosphorus unless
    - A soil test was taken within the last three years that indicates additional phosphorus is needed for growth.
    - Phosphorous containing fertilizer is used to establish a new lawn.
- Records shall be kept for all applications of Plant Nutrients or Phosphorus Containing Fertilizer to Non-agricultural Turf and Lawns consistent with 330 CMR 31.07.

3.2 FERTILIZER STORAGE

The Town utilizes subcontractors for the application of fertilizers at Town-owned property. Therefore, there is no current need for the Town to store fertilizers. If the Town were to change these procedures and need to store surplus fertilizer, the following guidelines would be adhered to.

Fertilizer storage and handling should be performed consistent with UMass Extension Service regarding Fertilizer storage and handling. Guidance can be found here:

https://ag.umass.edu/greenhouse-floriculture/greenhouse-best-management-practices-bmp-manual/fertilizer-storage-handling

Specifically, fertilizers should be stored as follows:

- Store fertilizers separate from other chemicals in dry conditions
- Provide extra care to concentrate stock solutions. Secondary containment should be used for stock solutions.
- Provide pallets to keep large drums or bags off the floor. Shelves for smaller containers should have a lip to keep the containers from sliding off easily. Steel shelves are easier to clean than wood if a spill occurs.
- For storage in large bulk tanks, provide a containment area large enough to confine 125 percent of the contents of the largest bulk container.
- Keep the storage area locked and clearly labeled as a fertilizer storage area. Preventing unauthorized use of fertilizers reduces the chance of accidental spills or theft. Labels on the windows and doors of the building give firefighters information about fertilizers and other products present during an emergency response to a fire or a spill.
- Provide adequate road access for deliveries and use, and in making the storage area secure. Also make it accessible, to allow getting fertilizers and other chemicals out in a hurry.
- Never store fertilizers inside a wellhouse or a facility containing an abandoned well.
- Reseal open containers and return to storage.
- Replace and/or repair damaged containers.
- Insure there are no floor drains within fertilizer containment areas.
- Insure fire detection and alarm systems are present. Oxidizers and flammable materials should be stored separately. Fire extinguishers should be immediately available. Fire Department should be notified annually of fertilizer inventories.
- Inventories should be actively maintained.
- Lighting should be provided.

- Inspections should occur monthly for 1) signs of container corrosion or other damage (leaking or damaged containers should be repackaged as appropriate) 3) faulty ventilation, electrical, and fire suppression systems (problems should be reported and corrected).
- Storage areas should be locked.
- Signs should be posted.
- Active mechanical temperature control should be provided with no direct sources of heat.
- Mechanical ventilation should be working and used.
- Fertilizer stock tanks should be labeled with fertilizer formulation and concentration; records should be kept of fertilizer formulation, concentration, date, and location of application; records should be kept of media nutrient analyses.
- Concentrated stock should be stored near the injector in high density polyethylene or polypropylene containers with extra heavy duty walls; secondary containment should be provided.
- Sufficient planning should be made to eliminate the need for disposal; empty fertilizer containers should be discarded based on latest advice from environmental protection authorities.
- Fertilizer systems should be cleaned. Solids and rinse solution should be composted.
- Secondary containment should be used for fertilizer stock tanks routinely; spill clean-up materials should be used for liquids (e.g., absorbent materials) and solids (e.g., shovel, dust pan, broom and empty and/or buckets) should be available within the general area.
- Any fertigation equipment should be checked monthly for accuracy; containment tanks, back flow preventers and any equipment that holds fertilizer in the dry or liquid form should be inspected; stock tanks should be inspected weekly for deterioration and cracks; the manufacturer recommendations should be followed when calibrating or working on fertilizer injector equipment; stock solution tanks and the areas surrounding fertilizer injectors and concentrated solutions should be kept clean and free of debris.

3.3 FERTILIZER DISPOSAL

The Town utilizes subcontractors for the application of fertilizers at Town-owned property. Therefore, there is no current need for the Town to dispose of fertilizers. If the Town were to change these procedures and need to dispose of surplus fertilizer, the following guidelines would be adhered to.

Consistent with the UMass Extension Service's guidance on fertilizer management, sufficient planning should be made to eliminate the need for disposal. Empty fertilizer containers should be discarded based on latest advice from environmental authorities.

SECTION 4 LAWN & LANDSCAPING MAINTENANCE

The Town maintains its public spaces and parks utilizing the Highway Department staff. The list of public spaces currently maintained by the Town include: Town Hall, Transfer Station, Highway Office, Milford Town Library, Milford Fire Department, Milford Police Department, Ruth Anne Bleakney Senior Center, Milford Youth Center, Milford Center Nursing Home, Animal Control/Dog Kennel, School Department Central Office (High School), Memorial Elementary School, Brookside Elementary School, Woodland Elementary School, Stacy Middle School, Milford Housing Authority, Milford Wastewater Treatment Plant, Upper Charles Trail Parking Areas (3), Votolato Field, Fino Field & Annex, Memorial Pool, Louisa Lake Recreational Area, Plains Park, Rosenfeld Field, Inglesi Field, Vernon Field, Tank Field, Tomaso Field, Town Park, Draper Memorial Park, Prospect Heights Park (see attached Figure 1).

4.1 CURRENT LAWN & LANDSCAPING PRACTICES

The Town currently maintains a mowing and landscaping schedule through the Highway Department. In addition to the application of fertilizers described in Section 3.0 above, lawn and landscaping maintaining activities include: mowing, tree-trimming and landscaping. The Town mows weekly April through November. The Town is currently reviewing its operation schedule, looking for ways to reduce the mowing frequency. Lawn mowing should be performed consistent with UMass Extension Service recommendations as follows:

https://ag.umass.edu/home-lawn-garden/fact-sheets/lawn-mowing

4.2 DISPOSAL OF LAWN CLIPPINGS

The Town removes lawn clippings from the mowed areas and stores them at the Fiske Mill Leaf and Compost Area. The stockpile is maintained on flat ground, away from any surface water.

The UMass Extension Service recommends that lawn clippings should generally remain left on the lawn unless there is an excessive amount of lawn clippings due to infrequent mowing. Lawn clippings are a valuable source of nutrients and can reduce the need for fertilization. In the event that lawns are mowed when grass is wet, they may clump together and need to be removed. Lawn clippings should be managed consistent with the UMass Extension Service recommendations as follows:

https://ag.umass.edu/home-lawn-garden/fact-sheets/lawn-mowing

4.3 ALTERNATIVE LANDSCAPING MATERIALS

The Town does not currently use alternative landscaping materials, but will look into the possibility of using them in future planting events. Any alternative landscape materials or practices should be coordinated with applicable guidance documents and regulations including, but not limited to:

- Massachusetts Regulations
- UMass Extension Service Guidance
- Applicable Federal Laws and Regulations
- Environmental Protection Agency Policies and Guidance documents.

SECTION 5 TRASH RECEPTACLES & PET WASTE

5.1 PUBLIC TRASH OPERATIONS

The Town currently maintains the trash receptacles at parks and other Town facilities. The trash is collected and deposited into local dumpsters twice a week.

The Town is currently reviewing its operation schedule, looking for ways to increase the efficiency of trash removal.

5.2 PET WASTE

The Town has pet waste informational signs installed along walkways in public parks and fields. The Town of Milford will work with Town Departments (Conservation, Highway Division, Parks, Planning) to discuss installing additional signage in the next year.

Efforts should be made to increase the number of signs installed to alert pet owners regarding the removal and disposal of pet wastes. All pet wastes should be collected by pet owners and disposed of in trash receptacles. Any signs posted should include wording that discourages pet owners from disposing of pet waste in catch basins.

SECTION 6 CATCH BASIN CLEANING PROGRAM

Traditional municipal storm drain systems were designed to quickly collect, treat, detain, infiltrate and convey stormwater runoff to receiving waters. The purpose of catch basin, inlet and storm drain cleanings is to remove accumulated sediment which prevents blockages, flooding and reduce the release of downstream pollutants.

Fine particles and pollutants generated by stormwater run-off, atmospheric deposition, vehicle emissions, breakup of street surface materials, littering, and sanding accumulate along the curbs of roads in between rainfall events. This results in the accumulation of trash and sediment. Pollutants attach to trash and sediment including nutrients, metals, hydrocarbons, bacteria, pesticides, and toxic chemicals. Storm drain maintenance is often the first opportunity to provide pre-treatment and remove pollutants before they are conveyed through the storm drain system. Because they effectively trap these pollutants, catch basins need to be cleaned out periodically to prevent those materials from being transported by high stormwater flows into downstream stormwater best management practices and Milford's waterways and water resources.

The catch basin maintenance schedule should begin annually after the last spring snowfall. Inspection should include the condition of the inlet structure grate, brick or concrete risers, oil hoods and inlet and outlet pipes. As applicable, each stormwater inlet should include a public awareness message (e.g. "drains to pond" or "only rain in this drain") stenciled or otherwise marked near the drain. Catch basins with illegible or missing labels should be noted on the inspection report and be re-labeled before the next scheduled inspection. Damage or deterioration threatening the structural integrity of any component, conveyance or facility should be repaired as soon as possible but no longer than before the next scheduled inspection. The Massachusetts Department of Environmental Protection Stormwater Management Standards recommend cleaning catch basins four times per year, including at the end of the snow removal and foliage removal seasons.

6.1 EXISTING CATCH BASIN CLEANING PROGRAM

The Town, with the assistance of a subcontractor, currently runs its catch basin cleaning program once per year, visiting all of the catch basins in town, typically in early spring. The Town performs the catch basin cleanings using a clamshell basin cleaner. Historically, Milford has had issues with poor drainage in older sections of town where the basins and drain pipes are made of stone. However, this area receives more frequent visits to help relieve these issues.

6.2 CATCH BASIN MAPPING AND INSPECTIONS

There are 3,800 catch basins throughout Milford that have been previously mapped in the MS4 area (2000 + 2010 Census) in Geographic Information System (GIS) format using historic handheld GPS units. A Town-wide mapbook has been prepared showing unique catch basin identifiers (CB-1001) to aid in accurately recording and cataloging data from field inspections. The mapbook is included with this report as Attachment 1 (stand-alone 11x17 set of maps). Additionally, catch basin locations are shown in the stormwater infrastructure map attached in Appendix G.

In the event that there are additional catch basin structures visited in the field that have not been mapped, the field crew will sketch in the approximate location, and label with a temporary ID for future entry into the system. This will allow the field crew to generate a historic record in the logging system for the new structures characteristics. The locations of the new catch basin structures will be captured in the future using a hand-held GPS unit.

During the catch basin cleaning program, the field crew will utilize the mapbook and a field inspection form in order to create a historic log for each structure. Items to be noted will include: condition of the grate cover, volume of sediment accumulated in the structure, date inspected/cleaned, marking paint condition, etc. The inspection form template for the catch basins is attached as Appendix B.

6.3 CATCH BASIN STRUCTURE PRIORITY RANKING

This section of the O&M Plan is to be used to focus on areas that typically found to generate high levels of sediment or if the Town decides, to reduce the scope of their annual catch basin cleaning program (i.e., not cleaning every catch basin every year).

In the event that catch basin cleaning's are prioritized, using the data collected during the field inspection program, the Town's stormwater catch basins will be assigned a priority maintenance schedule according to the following criteria:

- Priority A – Catch basins that are designated as consistently generating the highest volumes of trash, sediment and/or debris. These catch basins are typically located near construction activities. Any catch basins that are more than 50 percent full during two consecutive inspections and cleanings should receive top priority. Catch basins that are located in a high priority watershed or watershed discharging to an impaired water or water that has an established Total Maximum Daily Load should also be inspected more often.

- Priority B – Catch basins that are designated as consistently generating moderate volumes of trash, sediment and/or debris. These catch basins will consistently show sediment loads in the catch basin sumps but the depths of sediment may not reach 50 percent of the sump depth.

- Priority C – Catch basins that are designated as generating low volumes of trash, sediment and/or debris. These catch basins may not include any sediment on a consistent basis.

The future inspection/cleaning schedule assignments would be as follows:

BMP	Activity	Frequency
Catch Basin	Inspection / Cleaning	Priority A – Inspect four times per year. Clean when sediment reaches 50% of sump depth. Priority B – Inspect minimum of one time per year. Clean when sediment reaches 50% of sump depth. Priority C – Inspect minimum of one time per year

The Massachusetts Department of Environmental Protection Stormwater Management Standards recommend that catch basins be inspected four times per year or whenever the depths of sediment within the catch basin sump equals ½ the depth from the bottom of the sump to the catch basin invert. Newer catch basins that were installed consistent with MA DEP Stormwater Management Standards have typically included a four foot deep sump. Catch basins that were installed prior to the promulgation of these Standards, or did not meet the standards, may have been installed with a smaller sump depth, or possibly no sump at all.

Catch basin are to be cleaned when accumulated sediments and debris either by mechanical methods when its depth is equal to or greater than ½ the depth from the bottom of the basin to the invert of the outlet pipe. If a hydrocarbon sheen is noted on the surface of the water in the basin it shall be removed using absorbent pads; these pads will be allowed to dry prior to disposal in a solid waste dumpster pursuant to DEP's "1-drip" policy.

The materials removed from the catch basin shall not re-enter the stormwater system. Non-hazardous sediments are to be disposed of at an approved solid waste landfill and used as daily cover in accordance with Massachusetts DEP policy and regulations. In cases where an inspection reveals sediments with abnormal, non-natural discoloration or detects strong petroleum and/or chemical odors, the crew performing the catch basin cleanings should notify the Milford Fire Department for proper handling of hazardous materials. Also, a Licensed Site Professional (LSP) registered in the State of Massachusetts pursuant to MGL c.21A, §§ 19 through 19J shall be responsible for managing the disposal of such material in accordance with 310 CMR 40.0000 the Massachusetts Contingency Plan. Refer to Section 7.0 for proper catch basin cleaning material storage protocol.

The MS4 permit requires that logs be kept documenting the number of catch basins cleaned and inspected each year. The number of catch basins inspected, cleaned, and the total mass of material removed from each catch basin shall be reported each year.

SECTION 7 STREET SWEEPING PROGRAM

Street and parking lot sweeping is a practice that municipalities may have traditionally conducted for aesthetic purposes. However, the water quality benefits are widely recognized and street and parking lot sweeping is identified in the Massachusetts Department of Environmental Protection Stormwater Management Standards as a pretreatment strategy for removing solids, as well as the pollutants that become attached to sediment.

A number of factors impact the effectiveness of a street sweeping program. The first factor is the type of equipment used. When standard mechanical sweeping equipment needs to be replaced, high-performance sweepers are purchased preferentially. Street sweeping has traditionally been more effective at removing large-sized particles, but new equipment has been developed to remove smaller, fine-grained particles. Mechanical sweepers (broom-type) are usually the least expensive and are better suited to pick up large-grained sediment. Vacuum and regenerative air sweepers are better at removing fine-grained articles, but they are more expensive. Removal efficiency can be improved through tandem sweeping (i.e. two sweepers sweeping the same route, with one following the other to pick up missed material), or if the street sweeper makes multiple passes on a street. Vacuum sweepers are also best suited for cleaning pervious pavements.

The second factor influencing street sweeping effectiveness is the way in which the equipment is operated. The equipment must be operated according to the manufacturers' operating instructions by operators who have been properly trained to sweep in order to protect water quality.

The third determining factor is the degree to which parked cars or similar blockages can impede a sweeper's access to the curb.

The frequency of street sweeping is also a significant factor in removing sediments and other pollutants from municipal streets. The MS4 permit requires streets to be swept once per year in the spring following winter activities such as sanding.

7.1 EXISTING STREET SWEEPING PROGRAM

The Town currently runs their street sweeping program once per year, sweeping 120 miles of roads annually in early spring. The Highway department currently utilizes a work order system to track the date, number of loads taken, start/end times, names of streets swept, etc.

7.2 STREET SWEEPING PRIORITY RANKING

The permittee shall sweep and/or clean streets, and permittee-owned parking lots a minimum of once per year. All streets with the exception of high speed limited access highways should be swept and/or cleaned a minimum of once per year in the spring (following winter activities such as sanding). More frequent sweeping shall occur in targeted areas including streets and parking lots that consistently experience higher pollutant loads based on catch basin inspections and cleanings, proximity to constructions sites, and areas that discharge to water bodies with impairments or have a Total

Maximum Daily Load. The procedures shall also include more frequent sweeping of targets areas (See Appendix A and Figure 2)) determined by the permittee on the basis of following factors: (a) pollutant load reduction potential, (b) pollutant loads, (c) catch basin cleaning or inspection results, (d) land use, and (e) proximity to impaired/TMDL waters or other relevant factors as determined by the Town. These targeted areas are shown in Figure 2. The permittee shall report in each annual report the number of miles cleaned and the volume or mass of material removed.

For uncurbed, limited access highways, the permittee shall either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping plan within one year of the effective date of the permit, and submit such plan with its year one annual report.

This schedule applies only to streets and municipal parking lots with curb/gutter construction. Other municipal roadways and parking lots will be prioritized according to the previous schedule and will include trash and litter control as well as hand sweeping and collection. Sweepings collected during sweeping activities are currently stockpiled at the compost/snow dumpsite located at the Fisk Mill Road Leaf and Compost Area, and are transferred annually to the M.J. Murphy Landfill on South Main Street in Hopedale.

SECTION 8 BMP MAINTENANCE

An essential component of an effective municipal stormwater system is the ongoing operation and maintenance of the various components of the stormwater drainage and conveyance systems. Failure to provide effective maintenance of stormwater management systems can reduce the hydraulic capacity, the pollutant removal efficiency, and infiltration capacity of stormwater practices. Stormwater management system Operation and Maintenance Programs should address operation and maintenance concerns proactively instead of reacting to problems that occur such as flooding or water quality degradation associated with erosion, clogging or outright failure of one or more of the system components. Proactively inspecting facilities and addressing concerns provides some consistency in workflow and helps to avoid emergency situations.

There are two key components to adequately maintaining stormwater management infrastructure:

- Regularly scheduled inspections, and
- Regular maintenance.

8.1 PROPRIETARY SUBSURFACE SEPARATORS

Proprietary Subsurface Separators have a greater ability to trap and contain stormwater-borne pollutants than standard catch basins. They are fitted with baffles and chambers that create a hydrodynamic separation of floatable and non-floatable particles.

Proprietary Subsurface Separators under operational control of the Town will be maintained consistent with manufacturers operations and maintenance guidelines. Typically, these units need to be inspected a minimum of once per year. For units that are installed in high sediment areas, these units may need to be inspected more frequently.

Inspection of proprietary subsurface separators will include inspecting the operational condition of any baffles and filters contained within the structure. The depth of sediment collected in the separator will also be measured. All floatable trash will be removed from the separator during each inspection. If a hydrocarbon sheen is noted on the surface of the water in the separator it shall be removed using absorbent pads; these pads will be allowed to dry prior to disposal in a solid waste dumpster pursuant to DEP's "1-drip" policy. If the accumulated sediment is within 18 inches of the outlet elevation, it will be removed by vacuum or mechanical means. Disposal of all collected sediments will conform to the procedures described herein for disposal of sediments collected from municipal catch basins. The SOP for oil/water separator maintenance is attached in Appendix E.

8.2 STORMWATER BASINS

Stormwater basins are designed differently depending on site conditions and each project's approach to stormwater management. Stormwater basins can be further described to include the following types of stormwater basins that are more commonly designed and constructed:

- Extended Detention basins

- Infiltration Basins
- Wet Basins
- Bioretention Basins/Rain Gardens
- Sediment Forebays

Each specific type of basin has distinct operations and maintenance requirements as outlined in the Operations and Maintenance plan that was developed as part of each project's design and approval process. Below are operation and maintenance requirements that are specific to each type of stormwater basin as described in Massachusetts Stormwater Management Standards.

Extended Dry Detention Basins

- Inspect biannually
- Inspect outlet control structure for clogging, etc., twice per year
- Check for erosion, twice per year
- Check for sedimentation, annually
- Mow basin bottom, side slopes, spillway, twice per year
- Remove trash, twice per year

Infiltration Basins

- Inspection and perform preventive maintenance, minimum twice per year
- Inspect pretreatment BMP, as required by each BMP and after major storm events for first six months
- Inspect after major storms for first six months, check drawdown times
- Address ponding immediately
- Inspect twice per year for
    - Differential settlement
    - Cracking
    - Erosion
    - Leakage in embankments
    - Tree growth on embankments
    - Condition of rip-rap
    - Sediment accumulation (when bottom is dry)
    - Health of turf
- Mow side slopes and basin bottom, twice per year
- Remove trash and debris, twice per year
- When removing sediment, wait until bottom is dry, till remaining soil, revegetate
- Inspect and clean pretreatment devices minimum twice per year or more

Wet Basins

- Inspect annually
- Inspect outlet control structure for clogging, etc., twice per year
- Check for erosion, tree growth, etc., twice per year

- Mow dry/upper stages, twice per year
- Remove trash, sediment, twice per year

Bioretention Basins/Rain Gardens

- Inspect for soil erosion, monthly
- Inspect and remove trash monthly
- Inspect for invasive species/weeds, monthly
- Replace mulch, annually in the spring
- Remove dead vegetation, annually in either the fall or spring
- Replace dead vegetation, annually in either the fall or spring
- Prune, annually in either the fall or spring
- Replace soil media and all vegetation, as needed in either

Sediment Forebays

- Inspect monthly
- Clean minimum of four times per year
- Mow twice per year or when grass exceeds 6 inches in height
- Replace rip-rap pads, when necessary

The Town estimates that it has approximately 32 detention/retention basins within its MS4 System.

8.3 WATER QUALITY SWALES

Water Quality Swales under operational control by the Town should be maintained consistent with the Massachusetts Stormwater Management Standards or the Operations and Maintenance manual as approved as part of the projects design and approval.

The maintenance objective for water quality swales includes preserving the hydraulic and removal efficiency of the channel and maintaining a dense, healthy vegetative cover to encourage sediment removal and – where appropriate – stormwater infiltration. The following operations and maintenance activities are recommended for Water Quality Swales consistent with the Massachusetts Stormwater Management Standards:

- Inspect twice per year
- Mow annually, or if vegetation exceeds 6 inches
- Remove sediment/trash, minimum once per year
- Reseed eroded areas, as needed

Every five years, scraping of the channel bottom and removal of sediment to restore original cross section and infiltration rate, and seeding to restore ground cover is recommended.

Dry swales should be inspected on an annual basis and after storms of greater than or equal to the 1-year precipitation event. Both the structural and vegetative components should be inspected and repaired if needed. Trash and debris should be removed and properly disposed of.

Wet swales should be inspected annually and after storms of greater than or equal to the 1-year precipitation event. During inspection, the structural components of the system, including trash racks, valves, pipes, and spillway structures should be checked for proper function. Any clogged openings should be cleaned out and repairs should be made where necessary. Sediment should be removed from the bottom of the swale.

8.4 DRY WELLS

Dry wells are structures that collect stormwater generated by either roof tops or paved surfaces and infiltrate stormwater into the ground. Drywells vary in size and depth, but are typically either four, six or eight feet in diameter and have varying depths depending on ground water elevations. Dry wells typically have open bottoms and include perforations in concrete that allows water to leach out of the bottom and sides of the structures. The structures are typically surrounded by one to two feet of 3/4 to 1-1/2 inch stone around the sides and bottom of the dry well. When these facilities collect and infiltrate stormwater from surface runoff, pretreatment of stormwater is critical to insure that sediments are removed prior to discharge to the structure.

Maintenance of dry wells should include the following consistent with the Massachusetts Stormwater Management Standards:

- Inspect annually to insure that there has been no sediment build-up that could impact the functionality of the dry well.
- Remove sediment in the dry well when it reaches 50% capacity.
- Replace the structure and or stone when the system fails to infiltrate effectively.

8.5 OTHER STORMWATER BEST MANAGEMENT PRACTICES

The Stormwater Best Management Practices (BMP) described above are typically designed and constructed for projects where it is intended that the local municipality will assume Operations and Maintenance activities. There are numerous other stormwater Best Management Practices that are described within the Massachusetts Stormwater Standards. Operations and Maintenance activities related to these additional Best Management Practices should be conducted as outlined in the Standards, as well as in the Operations and Maintenance Plans developed and approved by local regulatory boards for each approved BMP. Additional stormwater BMP's that could be Operated and Maintained by municipalities include:

- Gravel Wetlands
- Constructed Wetlands
- Vegetated Filter Strips
- Sand and Organic Filters
- Infiltration Trenches
- Leaching Fields
- Porous Pavements
- Rain Barrels and Cisterns

SECTION 9 STREET SWEEPING & CATCH BASIN CLEANINGS

This section describes the disposal of the Town's Street Sweeping and Catch Basin Cleanings materials. The Town has traditionally disposed of catch basin cleanings and street sweepings at the compost/snow dump site located next to Plains Automotive on Fiske Mill Road (see Figure 3). The procedures required for properly managing these materials are further described below and in the SOP's attached as Appendix D.

9.1 STREET SWEEPINGS

The Town's street sweeping operations are mainly conducted once per year, sweeping 120 miles of roads annually in early spring. The street sweepings are subsequently brought back to the designated street sweeping stockpile area at Fisk Mill Road Leaf and Compost Area (Figure 3). From this stockpile, sweepings are periodically transferred to the M.J. Murphy Landfill on South Main Street in Hopedale. The annual amount generated is approximately 180 tons.

Street sweepings need to be disposed of consistent with the Massachusetts Department of Environmental Protection policy entitled "Reuse and Disposal of Street Sweepings, Department of Environmental Protection Policy # BAW-18-001," dated 5/14/18. They must also be managed under MassDEP Policy #COMM-97-001 "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills."

Street sweepings can be stored prior to use under the following conditions:

- Storage must occur at a site where the sweepings are generated.
- Storage must be at a location, such as a Department of Public Works yard, that is under control of the government entity doing the sweeping.
- Must be protected from wind and rain to prevent dust, erosion and off-site migration.
- Cannot be stored within 100 feet of a wetland or within a wetlands resource area or riverfront area.
- Cannot be stored within 500 feet of a ground or drinking water supply.
- Cannot result in a public nuisance.
- Must be temporary and will be used within one year of collection.

Street sweepings are considered "solid waste" and are therefore subject to the Massachusetts solid waste regulations. Street sweepings have been preapproved to be used for the following uses without Prior Approval from MassDEP:

- Daily cover at permitted lined solid waste landfills provided they meet the daily cover materials specified at 310 19.130(15).
- Use as Fill in Public or Private Ways and Parking Lots with some restrictions and conditions.
- Use as an Additive to Restricted Use Compost with some restrictions and conditions.

- Reuse as Anti-Skid Material with some restrictions and conditions.
- Reuse at Landfills Regulated under MassDEP Policy #COMM-97-001 with some restrictions and conditions.
- Use at Reclamation Soil Facilities Regulated Under MassDEP Policy #COMM-15-01.
- Street sweepings may also be used as a bulking agent for wastewater sludge or septage disposal granted prior approval is received from MassDEP.

9.2 CATCH BASIN CLEANINGS

The Municipality's catch basin cleaning operations are conducted once per year in the spring. The cleanings are subsequently brought back to the catch basin cleanings stockpile area located at the Fisk Mill Road Leaf and Compost Area (Figure 3). From this stockpile, cleanings are periodically transferred to the M.J. Murphy Landfill on South Main Street in Hopedale. The annual amount generated is approximately 350 tons.

Figure 3 also shows the location of the storage area in proximity to localized wetlands and waterbodies; a shallow marsh and shrub swamp are adjacent to the storage area, but due to the distance present (approximately 300 feet from the marsh and swamp), there is no direct route to discharge these materials to receiving waters.

Catch basin cleanings collected by the Town need to be disposed of consistent with the Massachusetts Department of Environmental Protection policies regarding "Management of Catch Basin Cleanings." Materials removed from catch basins are typically defined as solid waste by the Massachusetts Department of Environmental Protection. Any catch basin cleanings that have been contaminated by a spill, or are suspected of contamination need to be disposed of in accordance with the 310 CMR 30,000 Hazardous Waste Regulations. Any materials that contain liquids are prohibited from being disposed of at landfills. Dry materials can be disposed of at landfills, and may be approved for use as grading and shaping materials at landfills.

SECTION 10 WINTER ROAD MAINTENANCE

Winter Road Maintenance includes the management of equipment and facilities needed to maintain roads for safe travel as well as the application of anti-icing and de-icing materials. Municipalities are required to insure roads are as safe as possible. Because of this, the tendency to think that "more sand/salt is better" can be difficult to overcome. Several studies have shown that by using new techniques, equipment, and chemicals, roads can actually be safer with less salt use. MassDOT typically treats road using both anti-icing and de-icing strategies. Anti-icing involves applying a liquid solution to roads before a storm that prevents snow and ice from binding to the pavement. De-icing is performed during and after storms to remove ice and snow through plowing and applying additional materials to the surface of the roads. MassDOT typically uses 5 different materials to treat roads for snow and ice as follows:

- Rock salt
- Liquid magnesium chloride
- Liquid brine
- Sand
- Pre-mix (rock salt and calcium chloride)

Winter maintenance teams can benefit from the following practices:

1. Use the Right Material. Stop using sand, except for low-speed intersections, curves and hills. Use a chemical that is effective at current road surface temperatures. Consider using alternate chemicals on bridges and in source water protection areas.
2. Use the Right Amount. The number one factor in applying salt is the surface temperature. Warmer roads need less salt. Consider purchasing inexpensive infrared thermometers for spreading trucks.
3. Apply at the Right Place. Put salt down where it will do most good. Hills, curves/corners, shaded sections of road, bridges, etc., need special attention. A section of road with surface temp below 10°F will not benefit from rock salt. Use another chemical instead. Designate sensitive areas as low or no salt zones.
4. Apply at the Right Time. Apply as early as possible! Obtain and use the most up-to-date weather forecasts. Do not wait until snow is falling to get started. It takes much more salt to melt accumulated snow than it does to prevent accumulation. Factor in expected traffic, approaching day/night change in temperatures, etc. Brine can be applied very early, forming a bond with the road that can be effective for days in the right conditions.

10.1 SAND USE

The Town may use a 50/50 salt/sand mix for winter road maintenance. Municipalities should avoid using sand to the greatest extent practicable as it can clog storm drains and other stormwater management systems elements. In the event the stormwater management system is not maintained

properly and unable to capture sand, sand could possibly be discharges to water and wetland resources.

10.2 DEICING CHEMICAL USE

The Town uses salt and calcium chloride to deice roads after a storm event, applying the Safe Roads 32% liquid calcium chloride solution in conjunction with rock salt. On-board sprayers apply the Safe Roads solution and rock salt to roads from vehicles. As described above, deicing and anti-icing strategies should be used in lieu of sand when appropriate. When deemed appropriate, the Town applies a 50/50 sand/salt mix. The Town does not pretreat roads prior to storm events.

10.3 STORAGE OF SAND AND DEICING CHEMICALS

Deicing materials are stored in the Salt Shed at the Highway Department Facility. The salt is stored in a fully enclosed shed with an auxiliary salt shed in the wintertime for storage of the 50/50 salt/sand mix. The Safe Roads solution is stored in two 2,500 gallon tanks to the north of the salt shed.

Improper storage techniques can cause some of the most severe environmental damage from winter maintenance materials because they can result in highly concentrated runoff. Salt can cause serious environmental issues. Sand is typically mixed with salt, sand piles should also be included in a proper storage program.

Deicing chemicals (i.e. salt, calcium chloride, etc.) shall be stored in storage sheds or tanks in a manner that minimizes the potential for runoff. All deicing chemicals shall be covered when not in use. Sand piles shall be bermed to minimize runoff. During handling, sand and salt which fall outside of the storage areas will be swept back to the storage areas within 48 hours of the activity, to minimize runoff.

A properly stored salt/sand pile is:

- Located on a flat site.
- Located away from source water protection areas, floodplains and wetlands.
- Sited on an impermeable (paved) pad, with a drain that directs runoff to proper treatment.
- Covered with a roof and walls on at least 3 sides.

During regular inspections, the sand and deicing chemical storage areas shall be inspected by the Highway Workers to ensure that runoff is minimized. All findings during an inspection shall be sent to the Highway Superintendent.

Figure 4 shows the location of the sand and salt storage areas and the proximity to localized wetlands and waterbodies surrounding the storage area. Due to the distance present (approximately 360 feet from the Charles River), there is no direct route for the salt and sand materials to discharge into receiving waters.

Mass DEP Guideline DWSG97-1 pertaining to storage of road salt and other chemical deicing agents became effective December 19, 1997. Uncovered storage of salt is forbidden by Massachusetts

General Law Chapter 85, section 7A in areas that would threaten water supplies. 310 CMR 22.21(2)(b) restricts deicing chemical storage within wellhead protection areas, such as Zone I and Zone II, for public water supply wells, unless storage is within a structure designed to prevent the leaching or runoff of salt. 310 CMR 22.20C prohibits uncovered or uncontained storage of road or parking lot de-icing and sanding materials within Zone A at reservoirs.

10.4 SNOW DISPOSAL ACTIVITIES

The majority of snow plowed is pushed to the side of roads. In addition, Milford has a certified snow dump located at the Fiske Mill Road Leaf and Compost Area (see Figure 5).

The Massachusetts Department of Environmental Protection Bureau of Water Resources Snow Disposal Guidance, effective December 23, 2019 provides guidance on snow disposal activities. These guidelines provide the following criteria for selection of snow disposal sites including:

- Locating them adjacent to or on pervious surfaces in upland areas.
- Locating sites away from water resources and drinking water wells.
- Avoid storage of disposal of snow and ice containing deicing chemicals in Zone A And Zone II of a drinking water supply.
- Avoid storage and disposal of snow or ice within an Interim Wellhead Protection Area (IWPA) of public water supply wells and within 75 feet of private wells.
- Avoid dumping snow into any waterbody, including rivers, the ocean, reservoirs, ponds, or Wetlands.
- Avoid dumping snow on MassDEP designated high and medium yield aquifers.
- Avoid dumping snow in sanitary landfills and gravel pits.
- Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage systems including detention basins, swales, or ditches.

With regard to Site Preparation and Maintenance, MassDEP provides the following standards for snow disposal sites:

- Install a silt fence or barrier on the downgradient side of snow disposal sites.
- Maintain a minimum 50 foot vegetated buffer between the disposal site and adjacent waterbodies.
- Clear debris from the site prior to using the sit for snow removal.
- Clear debris from the site and properly dispose of it at the end of snow season, and no later than May 15.

With regard to snow disposal site approvals, MassDEP provides the following guidance:

- No review needed for previously used and mapped upland and pervious snow disposal locations.
- In cases where there is no snow disposal capacity, local Conservation Commissions may provide Emergency Certification under the Wetlands Protection Act to authorize snow disposal

in buffer zones to wetlands, open water areas, and resource areas. Emergency authorizations should utilize the following guidelines:

- Dispose of snow in open water with adequate flow and mixing to prevent ice dams from forming.
- Do not dispose of snow in salt marshes, vegetated wetlands, certified vernal pools, shellfish beds, mudflats, drinking water reservoirs and their tributaries, Zone IIs or IWPAs of public water supply wells, Outstanding Resource Waters, or Areas of Critical Environmental Concern.
- Do not dispose of snow where trucks may cause shoreline damage or erosion.
- Consult with the municipal Conservation Commission to ensure that snow disposal in open water complies with local ordinances and bylaws.

SECTION 11 VEHICLES AND EQUIPMENT

Regular maintenance of both municipal and contracted vehicles and heavy equipment prolongs the life of municipal assets and helps reduce the potential for leaking of fluids associated with normal wear and tear. Leakage of fluids from vehicles can drain towards stormwater management facilities and ultimately towards water bodies and wetland resources. Therefore, it is important from both an operational and stormwater management perspective that municipalities maintain their vehicles and equipment properly. With regards to the maintenance of vehicles and equipment, municipalities should conduct the following activities to insure their vehicles and other equipment are maintained in good working order.

11.1 VEHICLE AND EQUIPMENT MAINTENANCE

Vehicle and equipment maintenance is performed in the Vehicle Maintenance Garage at the Milford Highway Department Facility. All vehicle and equipment maintenance should be performed consistent with the Guidelines below.

- Create an inventory of all vehicles and equipment that are used on a regular basis.
- Maintain and update the inventory of vehicles and equipment.
- Monitor vehicles and equipment for leaks.
- In instances where machinery have leaks, repair machinery as soon as possible.
- Dispose of and/or recycle all fluids consistent with state and federal regulations. Do not dump fluids outside or into stormwater management facilities.
- Perform regular maintenance consistent with equipment manufacturer's recommendations.
- Perform all repairs and maintenance, including regular maintenance (i.e. oil changes. etc,) and painting, indoors.
- Insure that all drains within indoor facilities are not connected to stormwater management systems.
- Dispose of all waste materials and fluids consistent with local, state, and federal regulations.
- Insure that all fueling areas are covered.
- Insure that fueling areas should drain to an oil/gas separator or preferably fuel containment area.
- Store any waste materials under protection from outdoor elements and include secondary containment.
- Store all fluids in designated storage containers and areas. Insure these containers are located within buildings.
- Store and recycle batteries indoors.
- Insure that storage areas do not have floor drains. In the event that they do have floor drains, insure that they do not discharge to the municipal drain system or to wetland resource areas.
- Insure that all hazardous wastes are labelled and stored according to local, state, and federal regulations.

- Insure that any hazardous wastes are disposed of in accordance with local, state, and federal regulations.
- Perform all cleaning of parts indoors. Insure that all solvents are collected and recycled.

11.2 VEHICLE AND EQUIPMENT WASHING

Vehicle and equipment washing is performed at the vehicle wash bay at the Vehicle Storage Garage at the Milford Highway Department Facility. All vehicle and equipment washing should be performed consistent with the Guidelines below.

- All vehicles should be washed in a designated area.
- If possible, wash vehicles and equipment indoors. Indoor facilities should not have floor drains that are connected to the municipal stormwater management system or discharge to wetlands or water resources. Floor drains should be connected to either the sanitary sewage system, a recycled water system, or a tight tank.
- All wash water from vehicle washing should be collected by a recycling unit or tight tank.
- Do not discharge vehicle wash water to wetland resource areas or municipal drain systems.
- Use biodegradable or phosphate free detergents.
- Do not discharge any wash water to groundwater resource areas or wellhead protection areas.
- Maintain drip kits in wash areas.
- Provide separate wash and maintenance areas if possible.
- Remove any heavy debris, dirt, mud, etc. from vehicles separate from designated wash areas. Remove heavy debris, dirt, mud, etc. and dispose of properly.
- Wash engines or other motorized parts with a high incidence of fluids indoors. Contain any drips and spills to maximum extent practicable.
- Avoid using solvents and heavy detergents to the maximum extent practicable.

11.3 EMPLOYEE TRAINING

Regular employee training should be provided for all staff performing regular maintenance and/or equipment cleaning. Providing regular training a minimum of one time per year is recommended.

SECTION 12 FACILITY AUDIT

Facility audits should be performed consistent with the requirements of Section 2.3.7.a.ii of the MS4 Permit. Audits should be performed for municipal buildings and facilities, including:

- Town Hall
- Transfer Station
- Highway Office
- Milford Town Library
- Milford Fire Department
- Milford Police Department
- Ruth Anne Bleakney Senior Center
- Milford Youth Center
- Milford Center Nursing Home
- Animal Control Building/Dog Kennel
- Milford High School
- Memorial Elementary School
- Brookside Elementary School
- Woodland Elementary School
- Stacy Middle School
- Milford Housing Authority
- Milford Wastewater Treatment Plant
- Upper Charles Trail Parking Areas (3)
- Votolato Field
- Fino Field & Annex
- Memorial Pool
- Louisa Lake Recreational Area
- Plains Park
- Rosenfeld Field
- Inglesi Field
- Vernon Field
- Tank Field
- Tomaso Field
- Town Park
- Draper Memorial Park
- Prospect Heights Park
- Fiske Mill Road Leaf and Compost Area

(see attached Figure 1).

The facility audits should include observations and evaluations including:

- The storage, proper use, and disposal of pesticides, herbicides, and fertilizers
- Lawn maintenance and landscaping activities including
    - Mowing frequencies
    - Disposal of lawn clippings
    - Alternative landscaping techniques (drought resistant plantings)
    - Pet waste handling including collection, disposal, and signage
- Waterfowl management (if applicable)
- Trash management
- Erosion and sedimentation
- Storage, use, and disposal of petroleum products
- Spill management
- Dumpster and waste management
- Parking lot sweeping
- Vehicle storage
- Fuel storage
- Vehicle wash areas

Each facility audit should include an interview with the person in charge of managing and operating each facility. Results of the audit should be well documented – including photographs and submitted to the site manager. Any observed deficiencies should be noted.

SECTION 13 REPORTING AND RECORDKEEPING

The tracking and documentation of MS4 Maintenance and Operations is a required part of the permit program. All inspection forms will be recorded and stored at Highway Department office buildings to ensure that the proper documentation is maintained and reported on the annual reports and that the relevant data is added to the Town's management database. All documentation is stored in paper form.

SECTION 14 TRAINING

This component of the O&M Plan establishes the procedures for identifying, planning, delivering and tracking training. The training is provided to operations and maintenance staff as necessary to maintain knowledge and skills that help ensure that they understand their roles and responsibilities and can adequately perform their duties as they relate to supporting the standard operating procedures outlined in this O&M Plan. Training is provided to employees through three basic means: 1) Annual Environmental Awareness Training; 2) Right-to-Know Training; 3) Regulatory Specific Training (e.g., Stage II vapor recovery equipment inspections).

The Highway Superintendent is responsible for identifying the personnel that require training based upon job duties and how those duties relate to environmental compliance. All inspectors of stormwater management facilities should have some knowledge or experience with stormwater systems. If possible, trained stormwater engineers should, however, direct them. Inspections by registered engineers should be performed where routine inspection has revealed a question of structural or hydraulic integrity affecting public safety.

14.1 TRAINING LEAD

For those staff responsible for implementing the O&M program, on the job training will be managed by the Highway Superintendent. He will manage and assign training as described below.

The Highway Superintendent shall, at a minimum, annually train all public works employees or other employees involved in the implementation of the O&M program about the program. The Town shall report on the frequency and type of employee training in the annual report.

14.2 TRAINING PLAN

Training will be assigned to those individuals specifically involved in the O&M procedures.

Note that the Town may elect to retain consultants for development of the O&M structure database, and associated mapping tasks. Preliminary training activities, a schedule and identification of those to receive training are listed in the following table:

Training Topic	Attendees	Frequency	Description
Proper handling of hazardous materials	Town staff who handle potential stormwater pollutants	Min. once per year	As described in Section 2.3.7.a.ii.2 of the Permit, this training will cover the proper use, storage, and disposal of petroleum products and other potential stormwater pollutants.
Proper handling and disposal of catch basin cleanings and street sweepings	Town staff who handle catch basin cleanings and street sweepings	Min. once per year	As described in Section 2.3.7.a.iii.4 of the Permit, this training will cover proper handling and disposal of catch basin cleanings and street sweepings.

Training Topic	Attendees	Frequency	Description
Proper inspection and maintenance of stormwater Best Management Practices	Town staff who inspect and maintain stormwater Best Management Practices	Min. once per year	As described in Section 2.3.7.a.iii.6 of the Permit, this training will cover proper inspection and maintenance of stormwater Best Management Practices.

SECTION 15 MEASUREMENT OF SUCCESS

The success of the O&M program will be measured by each of the elements outlined in the previous sections. Specifically, the following benchmarks will be used:

- Number of catch basins inspected and cleaned annually
- Volume of material removed from catch basins
- Number of street miles of street sweepings conducted annually
- Number of municipally owned parking lots swept annually
- Amount of material removed from streets adjacent to sensitive waters
- Number of stormwater Best Management Practices inspected and maintained
- Number of outfalls repaired
- Training: number of employees trained
- Length of storm drain piping cleaned

SECTION 16 REFERENCES

Environmental Protection Agency, General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts, July 2018.

Massachusetts Department of Environmental Protection, Massachusetts Stormwater Handbook, February 2008.

330 CMR 31.00 Plant Nutrient Application Requirements for Agricultural Land and Non-Agricultural Turf and Lawns.

UMass Extension Service Resources/Websites

https://ag.umass.edu/greenhouse-floriculture/greenhouse-best-management-practices-bmp-manual/fertilizer-storage-handling

https://ag.umass.edu/home-lawn-garden/fact-sheets/lawn-mowing

Massachusetts Department of Environmental Protection policy entitled "Reuse and Disposal of Street Sweepings, Department of Environmental Protection Policy # BAW-18-001," dated 5/14/18.

Mass DEP Guidelines on Road Salt Storage DWSG97-1, effective December 19, 1997.

The Massachusetts Department of Environmental Protection Bureau of Water Resources Snow Disposal Guidance, effective December 23, 2019.

Rhode Island Department of Environmental Management and Coastal Resources Management Council, Rhode Island Stormwater Design and Installation Standards Manual; December 2010.

FIGURE 1

Parks and Open Space Maintenance

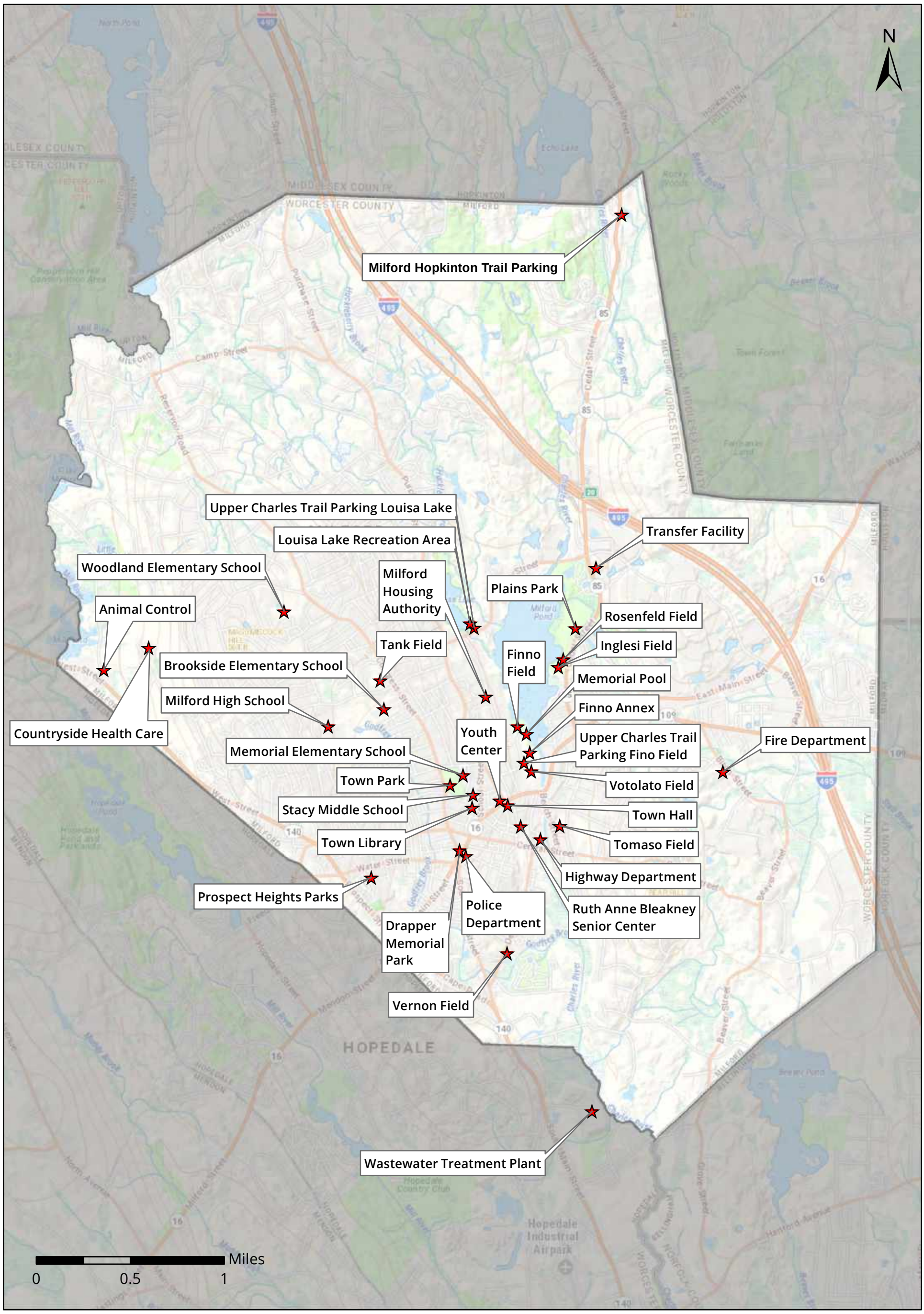

Figure 1. Parks and Open Space Maintenance Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

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FIGURE 2

Street Sweeping Prioritization

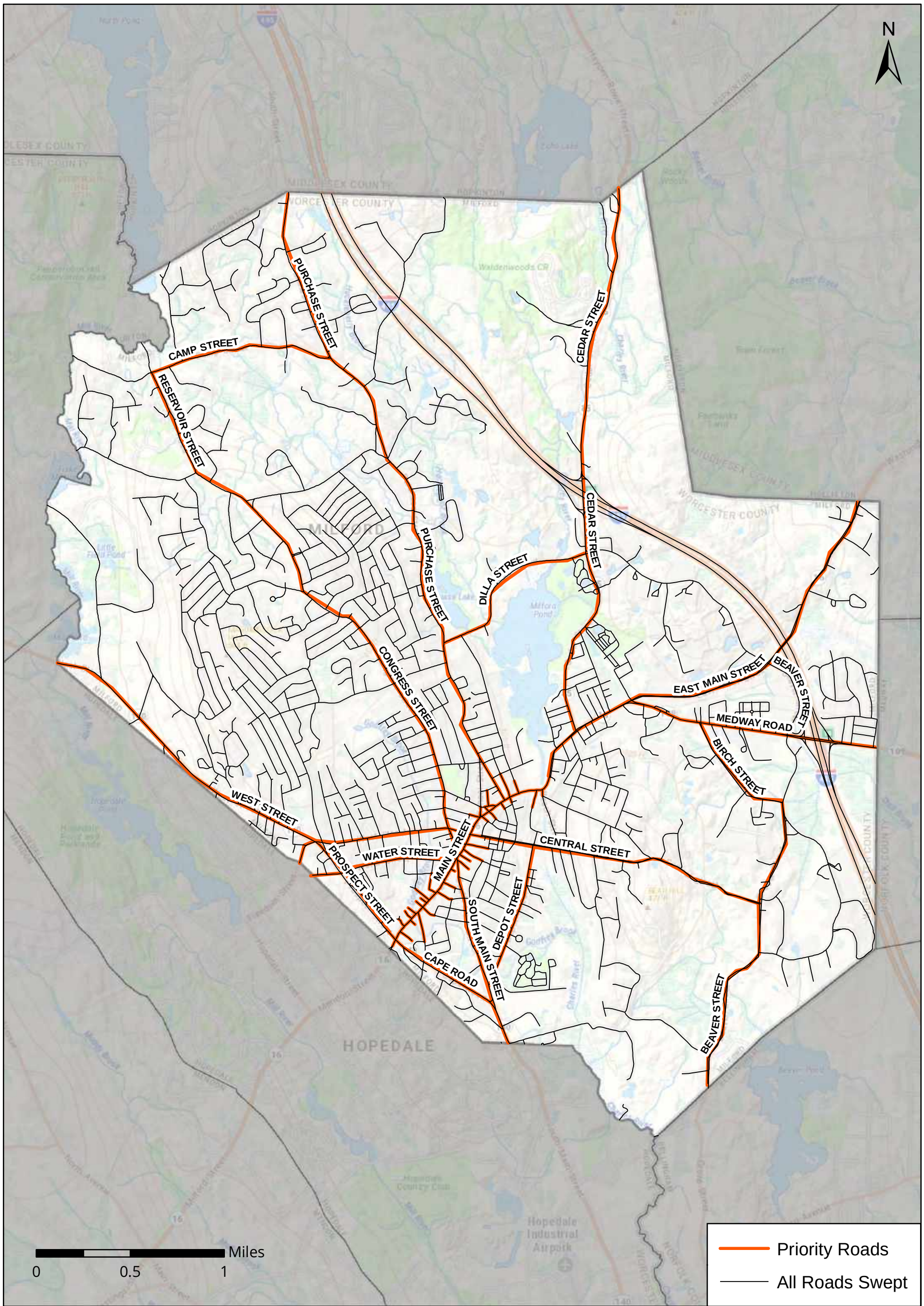

Figure 2. Street Sweepings Prioritization
Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

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FIGURE 3

Storage Location of Street Sweepings and Catch Basin Cleanings

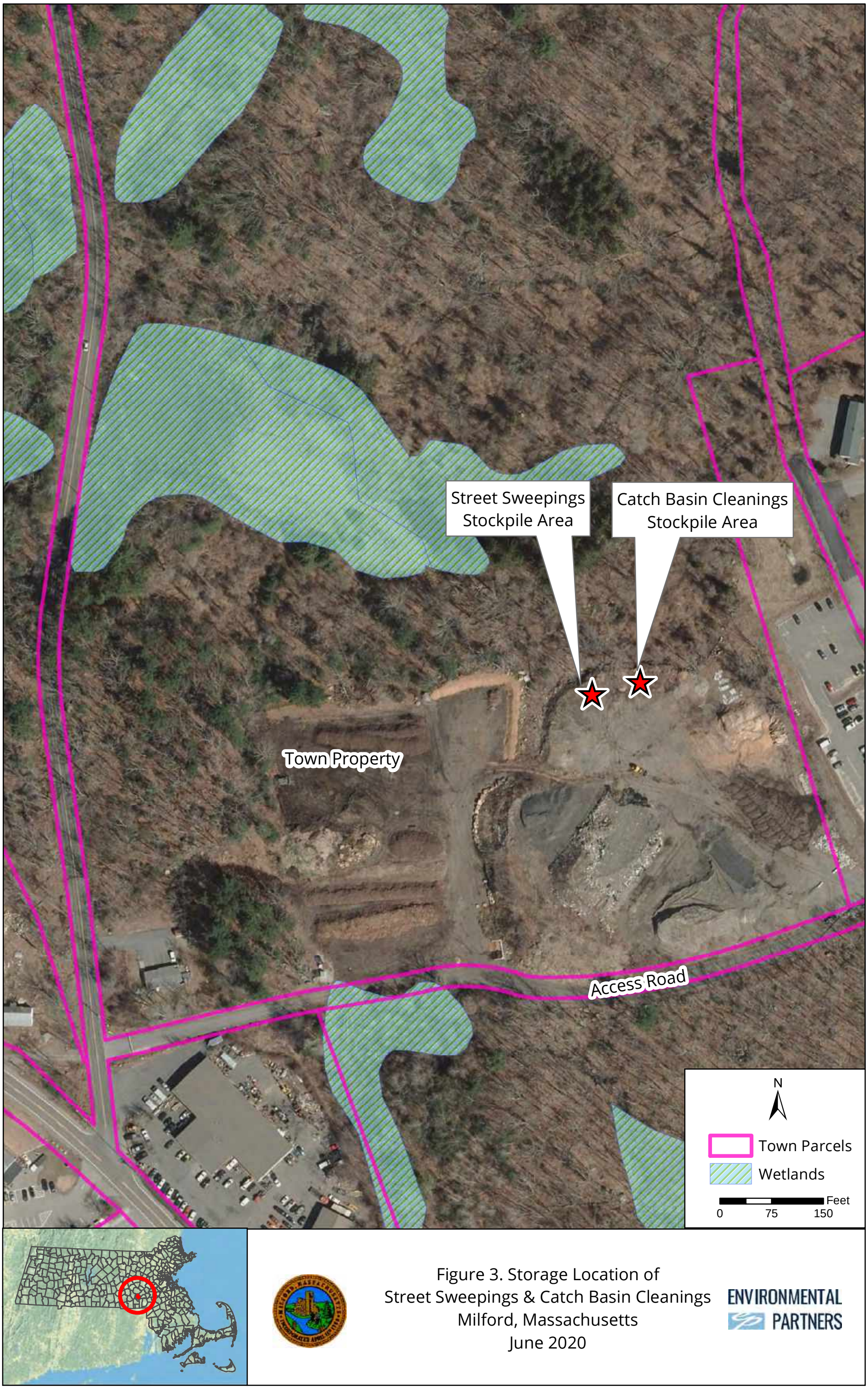

Figure 3. Storage Location of
Street Sweepings & Catch Basin Cleanings
Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

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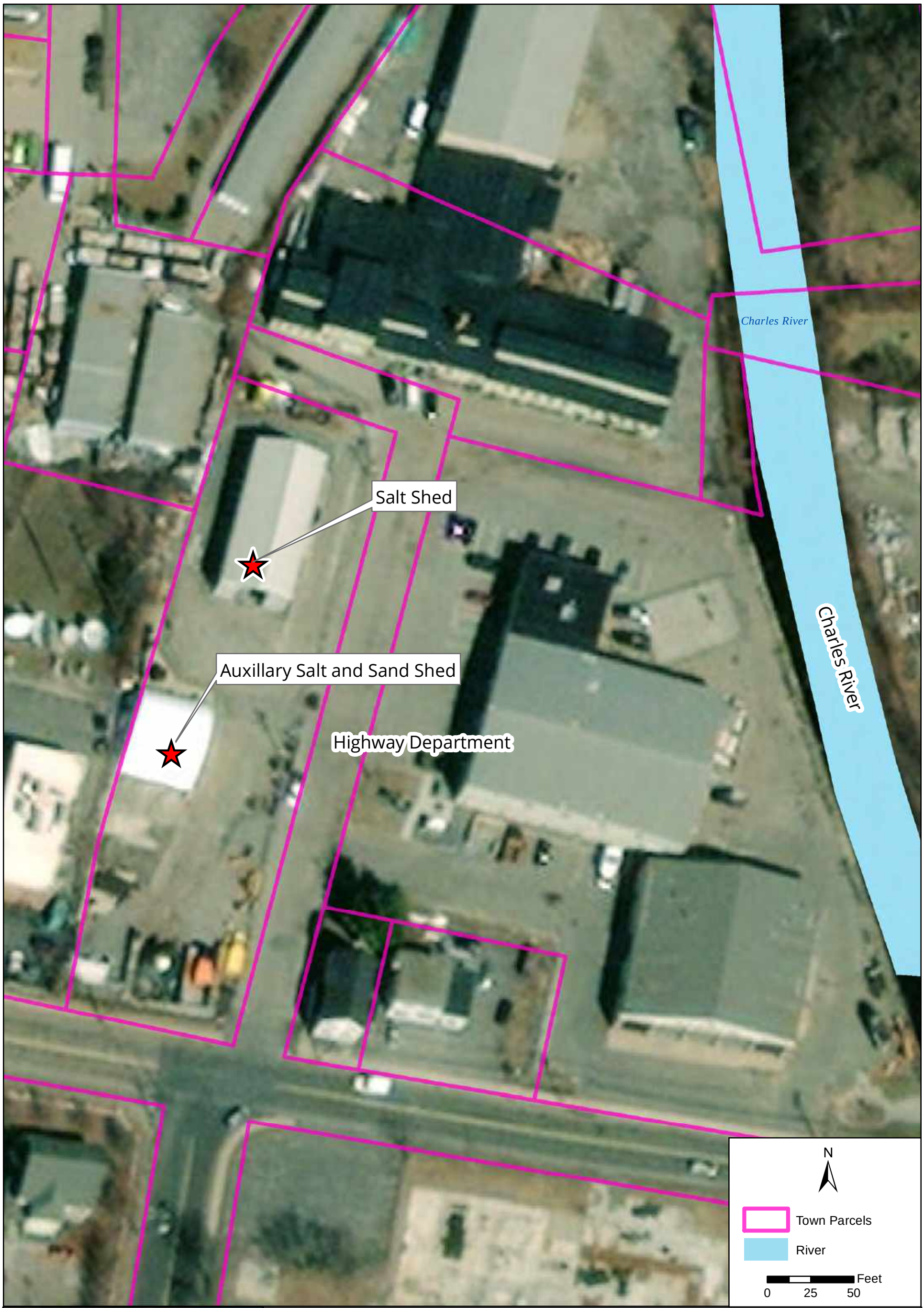
FIGURE 4

Storage Locations of Salt and Sand Supplies



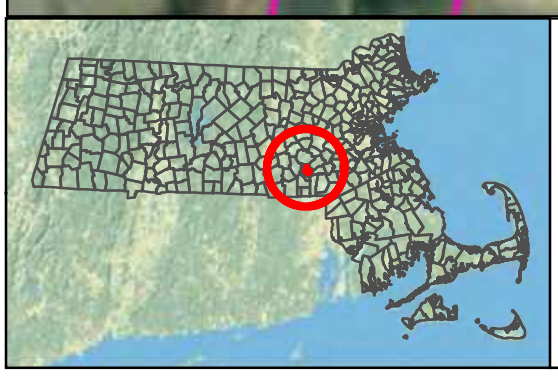


Figure 4. Storage Location of
Salt and Sand Supplies
Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

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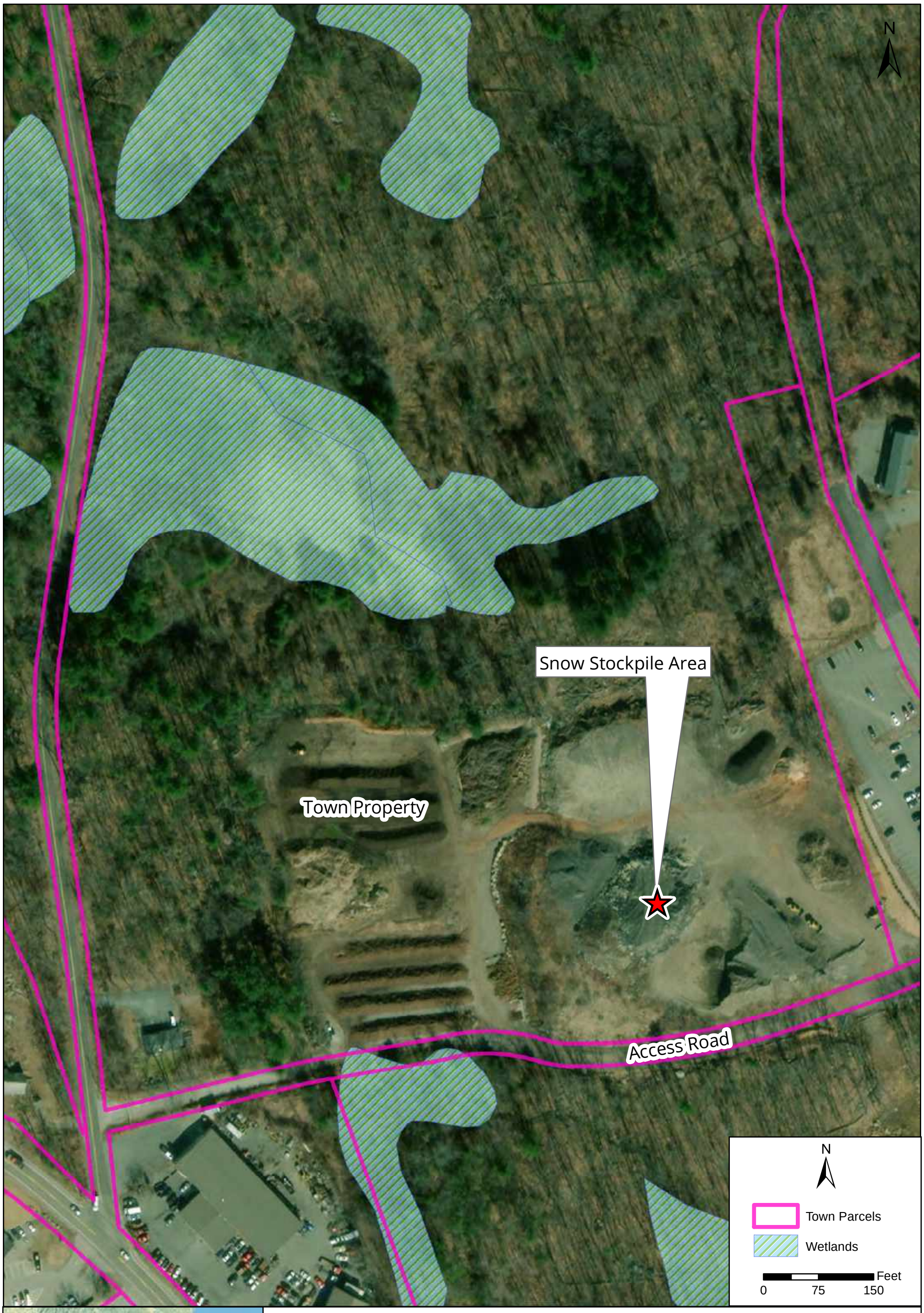
FIGURE 5

Storage Location of Snow Stockpiles



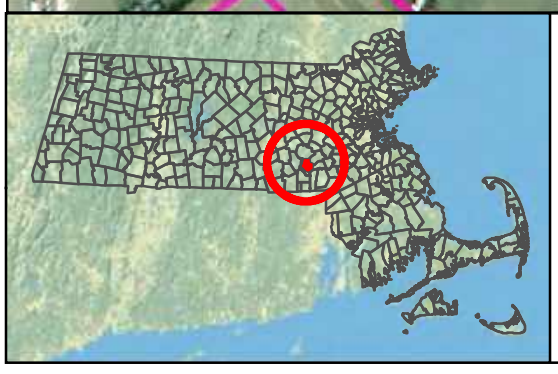


Figure 5. Storage Location of
Snow Stockpiles
Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

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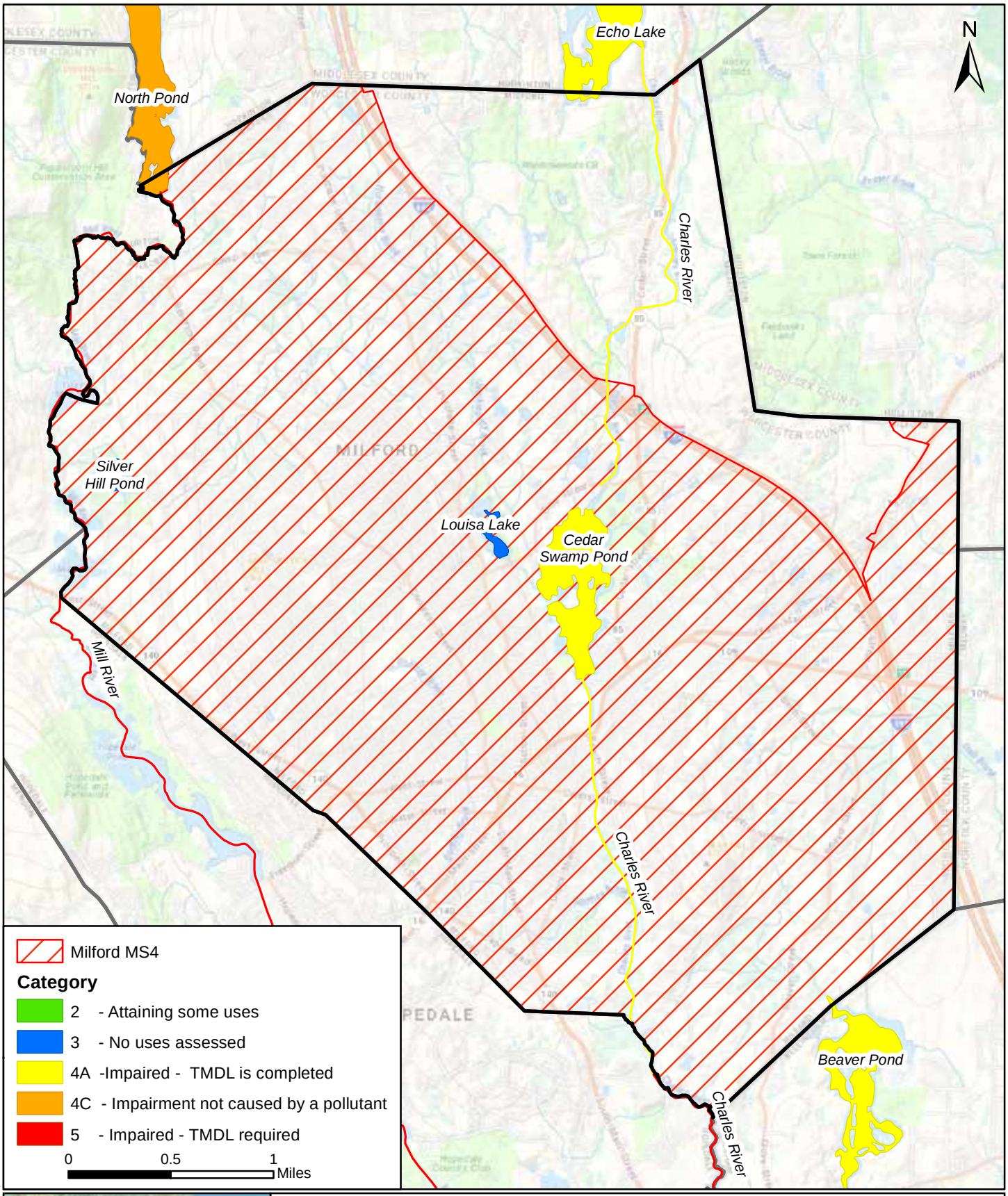
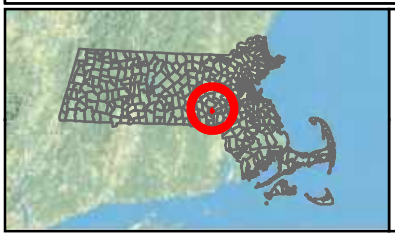
APPENDIX A

Urbanized Area and Impaired Waterbodies Map

Town of Milford, Massachusetts Year 2016 Integrated List of Waters





Appendix A. Urbanized Area
and Impaired Waterbodies Map
Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

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Town of Milford, Massachusetts
Massachusetts Year 2016 Integrated List of Waters
Impaired Waters

Category	Name	Segment ID	Description	Size	Units	Impairment Cause
4a – "TMDL is completed"	**Beaver Pond**	MA72004	Bellingham/Milford	87.00	ACRES	Mercury in Fish Tissue
	Cedar Swamp Pond	MA72016	Locally known as "Milford Pond", Milford	99.00	ACRES	(Non-Native Aquatic Plants*) Dissolved Oxygen Mercury in Fish Tissue
	Charles River	MA72-01	Headwaters, outlet Echo Lake, Hopkinton to Dilla Street (just upstream of Cedar Swamp Pond), Milford	2.50	MILES	(Dewatering*) (Flow Regime Modification*) Dissolved Oxygen
	Charles River	MA72-33	From outlet Cedar Swamp Pond, Milford to the Milford WWTF discharge (NPDES: MA0100579), Hopedale (formerly part of the segment MA72-02) (two culverted portions totaling approximately 1100 feet (0.21mile)).	2.00	MILES	(Physical substrate habitat alterations*) Escherichia Coli (E. Coli) Nutrient/Eutrophication Biological Indicators
	Echo Lake	MA72035	Milford/Hopkinton	72.00	ACRES	Mercury in Fish Tissue
4c – "Impairment not caused by a pollutant – TMDL not required"	**North Pond**	MA51112	Hopkinton/Milford	231.00	ACRES	(Non-Native Aquatic Plants*)
5 - "Water Requiring a TMDL"	**Mill River**	MA51-35	Outlet North Pond, Milford/Upton to Mendon/Blackstone corporate boundary (through former segments Fiske Millpond MA51049, Mill Pond MA51102, Hopedale Pond MA51065 and Spindleville Pond MA51158) (formerly part of segment MA51-10).	11.80	MILES	(Non-Native Aquatic Plants*) Aquatic Plants (Macrophytes) Metals PCB in Fish Tissue
	Charles River	MA72-03	Milford WWTF discharge, Hopedale to outlet Box Pond (formerly segment MA72008), Bellingham.	3.40	MILES	Excess Algal Growth DDT in Fish Tissue Dissolved Oxygen Saturation E. Coli Organic Enrichment (Sewage) Biological Indicators Phosphorus (Total)

*TMDL not required (Non-pollutant)

APPENDIX B

Catch Basin Inspection Form Template

Job No.: _____ **Town:** MILFORD

Inspector: _____ **Date:** _____

ENVIRONMENTAL PARTNERS

CATCH BASIN INSPECTION FORM

Catch Basin I.D.	_____	**Final Discharge from Structure?** Yes ☐ No ☐ **If Yes, Discharge to Outfall No:**_____	
Catch Basin Label:	**Stencil** ☐ **Ground Inset** ☐ **Sign** ☐ **None** ☐ **Other**_____		
Basin Material:	Concrete ☐ Corrugated metal ☐ Stone ☐ Brick ☐ Other: _____ ☐	**Catch Basin Condition:**	Good ☐ Poor ☐ Fair ☐ Crumbling ☐
Pipe Material:	Concrete ☐ HDPE ☐ PVC ☐ Clay Tile ☐ Other:_____	**Pipe Measurements:**	Inlet Dia. (in): d= ____ Outlet Dia. (in): D= ____

Required Maintenance/ Problems (check all that apply):

- ☐ Tree Work Required
- ☐ New Grate is Required
- ☐ Pipe is Blocked
- ☐ Frame Maintenance is Required
- ☐ Remove Accumulated Sediment
- ☐ Pipe Maintenance is Required
- ☐ Basin Undermined or Bypassed
- ☐ Cannot Remove Cover
- ☐ Ditch Work
- ☐ Corrosion at Structure
- ☐ Erosion Around Structure
- ☐ Remove Trash & Debris
- ☐ Need Cement Around Grate

Other: _____

Catch Basin Grate Type :	**Sediment Buildup Depth :**	**Description of Flow:**	**Street Name/ Structure Location:**
Bar: ☐ Cascade: ☐ Other:_____ Properly Aligned: Yes ☐ No ☐	0-6 (in): _____ 6-12(in): _____ 12-18 (in): _____ 18-24 (in): _____ 24 + (in): _____	Heavy ☐ Moderate ☐ Slight ☐ Trickling ☐	

***If the outlet is submerged check yes and indicate approximate height of water above the outlet invert.** h above invert (in):___ Yes ☐ No ☐

☐ **Flow** ☐ **Standing Water** **(check one or both)**	**Observations:**		**Circle those present:**
	Color:		Foam / Oil Sheen
	Odor:		Sanitary Waste / Bacterial Sheen
Weather Conditions :	Dry > 24 hours ☐	Wet ☐	Orange Staining / Floatables
Sample of Screenings Collected for Analysis? Yes ☐ No ☐			Excessive sediment / Pet Waste
Comments:			Other:_____ / Optical Enhancers

APPENDIX C

Stormwater BMP Inspection Form Template

INSPECTION OF BIORETENTION AREAS / RAIN GARDENS

General Information

BMP Description	Bioretention Area / Rain Garden		
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Inspect for soil erosion and repair	Monthly	Yes ☐ No ☐	
Inspect for invasive species and remove if present	Monthly	Yes ☐ No ☐	
Remove trash	Monthly	Yes ☐ No ☐	
Mulch void areas	Annually	Yes ☐ No ☐	
Remove dead vegetation	Bi-Annually	Yes ☐ No ☐	
Replace dead vegetation	Annually	Yes ☐ No ☐	
Prune	Annually	Yes ☐ No ☐	
Replace all media and vegetation	As Needed	Yes ☐ No ☐	

INSPECTION OF CONSTRUCTED STORMWATER WETLANDS
Years 0-3 of Operation

General Information

BMP Description	Constructed Stormwater Wetland		
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Inspect for invasive species and remove if present	Monthly	Yes ☐ No ☐	
Replace all media and vegetation	As Needed	Yes ☐ No ☐	

In addition, the following information should be recorded and mapped at least once per year:

- Types and distribution of dominant wetland plants
- Presence and distribution of planted wetland species
- Presence and distribution of invasive species
- Indications other species are replacing planted wetland species
- Percent of standing water that is not vegetated
- Replace all media and vegetation
- Stability of original depth zones and micro-topographic features
- Accumulation of sediment in the forebay and micropool and survival rate of plants

INSPECTION OF CONSTRUCTED STORMWATER WETLANDS
Year 4 - Lifetime of Operation

General Information

BMP Description	Constructed Stormwater Wetland		
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Inspect for invasive species and remove if present	Monthly	Yes ☐ No ☐	
Clean forebays	Annually	Yes ☐ No ☐	
Clean sediment in basin/wetland system	Once every 10 years	Yes ☐ No ☐	
Mulch void areas	Annually	Yes ☐ No ☐	
Remove dead vegetation	Bi-Annually	Yes ☐ No ☐	
Replace dead vegetation	Annually	Yes ☐ No ☐	
Prune	Annually	Yes ☐ No ☐	
Replace all media and vegetation	As Needed	Yes ☐ No ☐	

INSPECTION OF EXTENDED DRY DETENTION BASINS

Inspections should be conducted bi-annually, and during and after major storm events.

General Information

BMP Description	Extended Dry Detention Basin		
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Examine outlet structure for clogging or high outflow release velocities	Bi-Annually	Yes ☐ No ☐	
Mow upper stage, side slopes, embankment and emergency spillway	Bi-Annually	Yes ☐ No ☐	
Remove trash and debris	Bi-Annually	Yes ☐ No ☐	
Remove sediment from basin	At least once every 5 years	Yes ☐ No ☐	

INSPECTION OF PROPRIETARY MEDIA FILTERS

General Information

BMP Description	Media Filter		
BMP Location			
Media Type			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Inspect for standing water, trash, sediment and clogging	Bi-Annually (minimum)	Yes ☐ No ☐	
Remove trash and debris	Each Inspection	Yes ☐ No ☐	
Examine to determine if system drains in 72 hours	Annually	Yes ☐ No ☐	
Inspect filtering media for clogging	Per manufacturer's schedule	Yes ☐ No ☐	

INSPECTION OF SAND AND ORGANIC FILTERS

Inspections should be conducted after every major storm event for the first 3 months following completion, then every 6 months thereafter.

General Information

BMP Description	Sand/Organic Filter		
BMP Location			
Media Type			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Remove sediment, trash, and debris	Every 6 months	Yes ☐ No ☐	
Rake sand	Every 6 months	Yes ☐ No ☐	

INSPECTION OF DRY WELLS

Regular inspections should be conducted after every major storm event for the first 3 months following completion, then annually thereafter.

General Information

BMP Description	Dry Well		
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			
Describe condition of dry well at time of inspection			

After a major storm event, the water depth in the observation well should be measured at 24 and 48 hour intervals and the clearance rate calculated.

INSPECTION OF WET BASINS

Inspections should be conducted after every major storm event for the first 3 months following completion, then biannually thereafter.

General Information

BMP Description	Wet Basin		
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			
Describe condition of wet basin at time of inspection			

Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
Preventative maintenance	Bi-Annually	Yes ☐ No ☐	
Mow/rake buffer area, side slopes and basin bottom	Bi-Annually	Yes ☐ No ☐	
Remove trash, debris and organic matter	Bi-Annually	Yes ☐ No ☐	
Inspect and clean pretreatment devices	Every other month and after every major storm event	Yes ☐ No ☐	

INSPECTION OF OTHER BMP

General Information

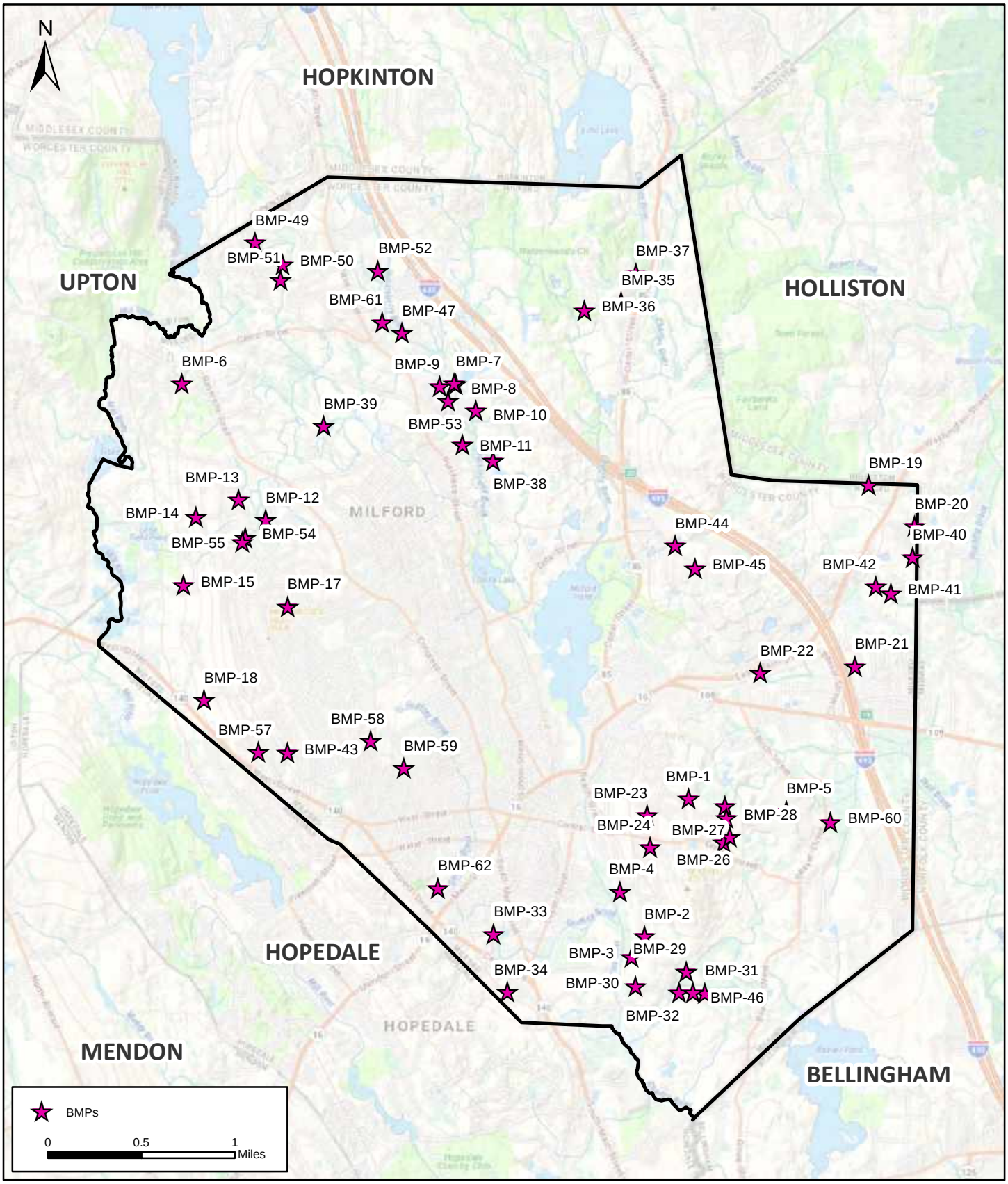
BMP Description			
BMP Location			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Type of Inspection: Regular ☐ Pre-Storm Event ☐ During Storm Event ☐ Post-Storm Event ☐			
Describe the weather conditions at time of inspection			

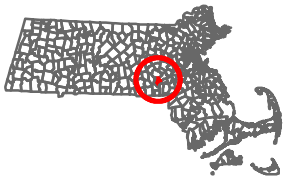
Specific Information

Maintenance Activity	Maintenance Frequency	Is Status of BMP Satisfactory?	Corrective Action Needed
		Yes ☐ No ☐	
		Yes ☐ No ☐	
		Yes ☐ No ☐	
		Yes ☐ No ☐	
		Yes ☐ No ☐	
		Yes ☐ No ☐	
		Yes ☐ No ☐	

APPENDIX D

Inventory of Stormwater Best Management Practices





Appendix D.
Inventory of Stormwater BMPs
Milford, Massachusetts

ENVIRONMENTAL PARTNERS

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APPENDIX E

Standard Operating Procedures (SOPs)

ENVIRONMENTAL PARTNERS

STANDARD OPERATING PROCEDURE 1: CATCH BASIN INSPECTION AND CLEANING

Introduction

Catch basins help minimize flooding and protect water quality by removing trash, sediment, decaying debris, solids from stormwater runoff, grease and oil, and pollutants attached to sediment such as phosphorus, nitrogen, bacteria, etc. Sediments are retained in the sump below the invert of the outlet pipe. Catch basin cleaning reduces foul odors, prevents clogs in the storm drain system, and reduces the loading of suspended solids, nutrients, and bacteria to receiving waters.

During regular cleaning and inspection procedures, data can be gathered related to the condition of the physical basin structure and its frame and grate and the quality of stormwater conveyed by the structure. Observations such as the following can indicate sources of pollution within the storm drain system:

- Oil sheen
- Discoloration
- Trash, debris and sediment

Both bacteria and petroleum can create a sheen on the water surface. The source of the sheen can be differentiated by disturbing it, such as with a pole. A sheen caused by oil will remain intact and move in a swirl pattern; a sheen caused by bacteria will separate and appear "blocky". Bacterial sheen is not a pollutant but should be noted.

Observations such as the following can indicate a potential connection of a sanitary sewer to the storm drain system, which is an illicit discharge.

- Indications of sanitary sewage, including fecal matter or sewage odors
- Foaming, such as from detergent
- Optical enhancers, fluorescent dye added to laundry detergent

Each catch basin should be cleaned and inspected at least annually. Catch basins in high-use areas that collect significant amounts of sediment may require more frequent cleaning. The Massachusetts Department of Environmental Protection Stormwater Management Standards recommend that sediment be removed when it reaches up to 50% of the sump depth. Performing street sweeping on

an appropriate schedule will reduce the amount of sediment, debris, and organic matter entering the catch basins, which will in turn reduce the frequency with which structures need to be cleaned.

Cleaning Procedure

Catch basin inspection cleaning procedures should address both the grate opening and the basin's sump. Document any and all observations about the condition of the catch basin structure and water quality on the Catch Basin Inspection Form (see Appendix B).

Catch basin inspection and cleaning procedures include the following:

1. Work upstream to downstream.
2. Clean sediment and trash off grate.
3. Visually inspect the outside of the grate.
4. Visually inspect the inside of the catch basin to determine cleaning needs.
5. Inspect catch basin for structural integrity.
6. Determine the most appropriate equipment and method for cleaning each catch basin.
    a. Manually use a shovel to remove accumulated sediments, or
    b. Use a bucket loader to remove accumulated sediments, or
    c. Use a high pressure washer to clean any remaining material out of catch basin while capturing the slurry with a vacuum.
    d. If necessary, after the catch basin is clean, use the rodder of the vacuum truck to clean downstream pipe and pull back sediment that might have entered downstream pipe.
7. If contamination is suspected, chemical analysis will be required to determine if the materials comply with the Massachusetts DEP Hazardous Waste Regulations, 310 CMR 30.000 (https://www.mass.gov/files/documents/2016/08/xl/310cmr30_7883_54357.pdf). Chemical analysis required will depend on suspected contaminants. Note the identification number of the catch basin on the sample label, and note sample collection on the Catch Basin Inspection Form.
8. Properly dispose of collected sediments. See following section for guidance.
9. If fluids collected during catch basin cleaning are not being handled and disposed of by a third party, dispose of these fluids to a sanitary sewer system, with permission of the system operator.
10. If illicit discharges are observed or suspected, notify the appropriate Department.
11. At the end of each day, document location and number of catch basins cleaned, amount of waste collected, and disposal method for all screenings.
12. Report additional maintenance or repair needs to the appropriate Department.

Disposal of Screenings

Catch basin cleanings from storm water-only drainage systems may be disposed at any landfill that is permitted by MassDEP to accept solid waste. MassDEP does not routinely require stormwater-only catch basin cleanings to be tested before disposal, unless there is evidence that they have been contaminated by a spill or some other means.

Screenings may need to be placed in a drying bed to allow water to evaporate before proper disposal. In this case, ensure that the screenings are managed to prevent pollution.

Catch basin cleanings collected by the Town of Milford need to be disposed of consistent with the Massachusetts Department of Environmental Protection policies regarding "Management of Catch Basin Cleanings." Materials removed from catch basins are typically defined as solid waste by the Massachusetts Department of Environmental Protection. Any catch basin that have been contaminated by a spill, or are suspected of contamination need to be disposed of in accordance with the 310 CMR 30,000 Hazardous Waste Regulations. Any materials that contain liquids are prohibited from being disposed of at landfills. Dry materials can be disposed of at landfills, and may be approved for use as grading and shaping materials at landfills.

Attachments

Catch Basin Inspection Form

ENVIRONMENTAL PARTNERS

STANDARD OPERATING PROCEDURE 2:

INSPECTING CONSTRUCTED BEST MANAGEMENT PRACTICES

Introduction

Best Management Practices (BMPs) are policies, procedures and structures designed to reduce stormwater pollution, prevent contaminant discharges to natural water bodies, and reduce stormwater facility maintenance costs. Constructed BMPs are permanent site features designed to treat stormwater before infiltrating it to the subsurface or discharging it to a surface water body.

This Standard Operating Procedure provides a general summary of inspection procedures for eight common constructed BMPs, including:

1. Bioretention Areas and Rain Gardens
2. Constructed Stormwater Wetlands
3. Extended Dry Detention Basins
4. Proprietary Media Filters
5. Sand and Organic Filters
6. Wet Basins
7. Dry Wells
8. Infiltration Basins

This SOP is based on the Massachusetts Stormwater Handbook and is not intended to replace that document. This SOP is also not intended to replace the Stormwater BMP Operation and Maintenance (O&M) Plan required by the Massachusetts Wetlands Protection Act, Order of Conditions.

Bioretention Areas and Rain Gardens

Bioretention areas and rain gardens are shallow depressions filled with sandy soil, topped with a thick layer of mulch and planted with dense native vegetation. There are two types of bioretention cells:

1. Filtering bioretention area: Areas that are designed solely as an organic filter; and
2. Exfiltration bioretention area: Areas that are configured to recharge groundwater in addition to acting as a filter

Inspection & Maintenance

Regular inspection and maintenance are important to prevent against premature failure of bioretention areas or rain gardens. Regular inspection and maintenance of pretreatment devices and bioretention cells for sediment buildup, structural damage and standing water can extend the life of the soil media.

MAINTENANCE SCHEDULE: BIORETENTION AREAS AND RAIN GARDENS

Activity	Time of Year	Frequency
Inspect for soil erosion and repair	Year round	Monthly
Inspect for invasive species and remove if present	Year round	Monthly
Remove trash	Year round	Monthly
Mulch Void Areas	Spring	Annually
Remove dead vegetation	Fall and Spring	Bi-Annually
Replace dead vegetation	Spring	Annually
Prune	Spring or Fall	Annually
Replace all media and vegetation	Late Spring/Early Summer	As Needed

When failure is discovered, excavate the bioretention area, scarify the bottom and sides, replace the filter fabric and soil, replant vegetation and mulch the surface.

Never store snow within a bioretention area or rain garden. This would prevent required water quality treatment and the recharge of groundwater.

Constructed Stormwater Wetlands

Constructed stormwater wetlands maximize the pollutant removal from stormwater through the use of wetland vegetation uptake, retention and settling. Constructed storm water wetlands must be used in conjunction with other BMPs, such as sediment forebays.

Inspection & Maintenance

Regular inspection and maintenance are important to prevent against premature failure of bioretention areas or rain gardens. Regular inspection and maintenance of pretreatment devices and bioretention cells for sediment buildup, structural damage and standing water can extend the life of the soil media.

MAINTENANCE SCHEDULE, CONSTRUCTED STORMWATER WETLANDS: YEARS 0-3

Activity	Time of Year	Frequency
Inspect for invasive species and remove if present	Year round	Monthly
Record and Map:	Year round	Annually
Types and distribution of dominant wetland plants	Year round	Bi-Annually
Presence and distribution of planted wetland species	Spring	Annually
Presence and distribution of invasive species	Fall and Spring	Bi-Annually
Indications other species are replacing planted wetland species	Spring	Annually
Percent of standing water that is not vegetated	Spring or Fall	Annually
Replace all media and vegetation	Late Spring/Early Summer	As Needed
Stability of original depth zones and micro-topographic features		
Accumulation of sediment in the forebay and micropool and survival rate of plants		

MAINTENANCE SCHEDULE, CONSTRUCTED STORMWATER WETLANDS: YEARS 4 – LIFETIME

Activity	Time of Year	Frequency
Inspect for invasive species and remove if present	Year round	Monthly
Clean forebays	Year round	Annually
Clean sediment in basin/wetland system	Year round	Once every 10 years
Mulch Void Areas	Spring	Annually
Remove dead vegetation	Fall and Spring	Bi-Annually
Replace dead vegetation	Spring	Annually
Prune	Spring or Fall	Annually
Replace all media and vegetation	Late Spring/Early Summer	As Needed

When failure is discovered, excavate the bioretention area, scarify the bottom and sides, replace the filter fabric and soil, replant vegetation and mulch the surface.

Never store snow within a constructed stormwater wetland. This would prevent required water quality treatment and the recharge of groundwater.

Extended Dry Detention Basins

Extended dry detention basins are designed to control both stormwater quantity and quality. These BMPs are designed to hold stormwater for at least 24 hours, allowing solids to settle and to reduce local and downstream flooding. Pretreatment is required to reduce the potential for overflow clogging. The outflow may be designed as either fixed or adjustable. Additional nutrient removal may be achieved by a micropool or shallow marsh.

Inspection & Maintenance

Annual inspection of extended dry detention basins is required to ensure that the basins are operating properly. Potential problems include: erosion within the basin and banks, tree growth on the embankment, damage to the emergency spillway and sediment accumulation around the outlet. Should any of these problems be encountered, necessary repairs should be made immediately.

MAINTENANCE SCHEDULE: EXTENDED DRY DETENTION BASINS

Activity	Time of Year	Frequency
Inspect basins	Spring and Fall	Bi-Annually, and during and after major storms
Examine outlet structure for clogging or high outflow release velocities	Spring and Fall	Bi-Annually
Mow upper stage, side slopes, embankment and emergency spillway	Spring through Fall	Bi-Annually
Remove trash and debris	Spring	Bi-Annually
Remove sediment from basin	Year round	At least once every 5 years

Proprietary Media Filters

Media Filters are designed to reduce total suspended solids and other target pollutants, such as organics, heavy metals or nutrients, which are sorbed onto the filter media, which is contained in a concrete structure. The substrate used as filter media depends on the target pollutants, and may consist of leaf compost, pleated fabric, activated charcoal, perlite, amended sand in combination with perlite, and zeolite. Two types of Media Filters are manufactured: Dry Media Filters, which are designed to dewater within 72 hours; and Wet Media Filters, which maintain a permanent pool of water as part of the treatment system.

Inspection & Maintenance

Maintenance in accordance with the manufacturer's requirements is necessary to ensure stormwater treatment. Inspection or maintenance of the concrete structure may require OSHA confined space training. Dry Media Filters are required to dewater in 72 hours, thus preventing mosquito and other insect breeding. Proper maintenance is essential to prevent clogging. Wet Media Filters require tight fitting seals to keep mosquitoes and other insects from entering and breeding in the permanent pools. Required maintenance includes routine inspection and treatment.

MAINTENANCE SCHEDULE: EXTENDED DRY DETENTION BASINS

Activity	Time of Year	Frequency
Inspect for standing water, trash, sediment and clogging	Per manufacturer's schedule	Bi-Annually (minimum)
Remove trash and debris	N/A	Each Inspection
Examine to determine if system drains in 72 hours	Spring, after large storm	Annually
Inspect filtering media for clogging	Per manufacturer's schedule	Per manufacturer's schedule

Sand and Organic Filters

Sand and organic filters, also known as filtration basins, are intended for quality control rather than quantity control. These filters improve water quality by removing pollutants through a filtering media and settling pollutants on top of the sand bed and/or in a pretreatment basin. Pretreatment is required to prevent filter media from clogging. Runoff from the filters is typically discharged to another BMP for additional treatment.

MAINTENANCE SCHEDULE: EXTENDED DRY DETENTION BASINS

Activity	Frequency
Inspect filters and remove debris	After every major storm for the first 3 months after construction completion. Every 6 months thereafter.

Wet Basins

Wet basins are intended to treat stormwater quality through the removal of sediments and soluble pollutants. A permanent pool of water allows sediments to settle and removes the soluble pollutants, including some metals and nutrients. Additional dry storage is required to control peak discharges during large storm events, and if properly designed and maintained wet basins can add fire protection, wildlife habitat and aesthetic values to a property.

Inspection & Maintenance

To ensure proper operation, wet basin outfalls should be inspected for evidence of clogging or excessive outfall releases. Potential problems to investigate include erosion within the basin and banks, damage to the emergency spillway, tree growth on the embankment, sediment accumulation around the outlet and the emergence of invasive species. Should any of these problems be encountered, perform repairs immediately. An on-site sediment disposal area will reduce sediment removal costs.

MAINTENANCE SCHEDULE: WET BASINS

Activity	Time of Year	Frequency
Inspect wet basins	Spring and/or Fall	Annually (Minimum)
Mow upper stage, side slopes, embankment and emergency spillway	Spring through Fall	Bi-Annually (Minimum)
Remove sediment, trash and debris	Spring through Fall	Bi-Annually (Minimum)
Remove sediment from basin	Year round	As required, but at least once every 10 years

Dry Wells

Dry wells are used to infiltrate uncontaminated runoff. These BMPs should never be used to infiltrate stormwater or runoff that has the potential to be contaminated with sediment and other pollutants. Dry wells provide groundwater recharge and can reduce the size and cost required of

downstream BMPs or storm drains. However, they are only applicable in drainage areas of less than one acre and may experience high failure rates due to clogging.

Inspection & Maintenance

Proper dry well function depends on regular inspection. Clogging has the potential to cause high failure rates. The water depth in the observation well should be measured at 24 and 48 hour intervals after a storm and the clearance rate calculated. The clearance rate is calculated by dividing the drop in water level (inches) by the time elapsed (hours).

MAINTENANCE SCHEDULE: DRY WELLS

Activity	Frequency
Inspect dry wells	After every major storm for the first 3 months after construction completion. Annually thereafter.

Infiltration Basins

Infiltration basins are designed to contain stormwater quantity and provide groundwater recharge. Pollution prevention and pretreatment are required to ensure that contaminated stormwater is not infiltrated. Infiltration basins reduce local flooding and preserve the natural water balance of the site, however high failure rates often occur due to improper siting, inadequate pretreatment, poor design and lack of maintenance.

Inspection & Maintenance

Regular maintenance is required to prevent clogging, which results in infiltration basin failure. Clogging may be due to upland sediment erosion, excessive soil compaction or low spots. Inspections should include signs of differential settlement, cracking, erosion, leakage in the embankments, tree growth on the embankments, riprap condition, sediment accumulation and turf health.

MAINTENANCE SCHEDULE: INFILTRATION BASINS

Activity	Time of Year	Frequency
Preventative maintenance	Spring and Fall	Bi-Annually
Inspection	Spring and Fall	After every major storm for the first 3 months after construction completion. Bi-annually thereafter and discharges through the high outlet orifice.
Mow/rake buffer area, side slopes and basin bottom	Spring and Fall	Bi-Annually
Remove trash, debris and organic matter	Spring and Fall	Bi-Annually

Attachments

Inspection of Bioretention Areas/Rain Gardens

ENVIRONMENTAL PARTNERS

STANDARD OPERATING PROCEDURE 3:

OIL/WATER SEPARATOR (OWS) MAINTENANCE

Oil/water separators (OWS), also known as gas/oil separators, are structural devices intended to provide pretreatment of floor drain water from industrial and garage facilities. An OWS allows oils (and substances lighter than water) to be intercepted and be removed for disposal before entering the sanitary sewer system. Substances heavier than water settle into sludge at the bottom of the unit. The remaining water passes through the unit into the sanitary sewer system.

General OWS Maintenance Requirements

OWS units are generally required where petroleum-based products, wastes containing petroleum, or oily and/or flammable materials are used, produced, or stored. OWS units should not be used to manage stormwater or flow from vehicle washing facilities. High flow rates through an OWS will reduce the structure's ability to separate materials. Detergents and solvents can emulsify oil and grease, allowing the particles to enter the sewer, so these should not be disposed of in drains entering the OWS.

1. Each OWS at a facility may receive different materials in different quantities, so the cleanout schedule may not be the same for every OWS at a facility.
2. Employees performing inspections of an OWS must be properly trained and be familiar with the maintenance of that specific structure, since function can vary based on design. Third-party firms may be utilized to perform quarterly inspections.
3. Do not drain petroleum, oil, or lubricants directly to an OWS. The structures are designed to manage these materials at low and medium concentrations in sanitary sewage, not as slug loads.
4. Do not drain antifreeze, degreasers, detergents, fuels, alcohols, solvents, coolant, or paint to the OWS.
5. Separator compartment covers should be tightly sealed to ensure floor drainage only enters the first compartment of the OWS.
6. Drains should be kept free of debris and sediment to the maximum extent practicable.
7. Spill cleanup materials should be maintained in the area served by the OWS. For more information on spill cleanup and response materials, refer to SOP 4, "Spill Response and Cleanup Procedures".

OWS Inspection Procedures

Daily inspection of an OWS should include a visual examination of the area served by the OWS for evidence of spills or leaks.

Weekly inspections of an OWS should include the following:
Catch basin inspection and cleaning procedures include the following:

1. Visually examine the area served by the OWS for evidence of spills or leaks.
2. Inspect the point of discharge (i.e., sewer manhole) for evidence of petroleum bypassing the OWS.
3. Inspect drains for any signs of unauthorized substances entering the OWS.
4. Examine the OWS for signs of leaks or any malfunction.

Quarterly inspections of an OWS should include the following:

1. Complete tasks noted as appropriate for daily and weekly inspection.
2. Complete the Quarterly OWS Inspection Checklist, attached, during the inspection.
3. Take the following measurements to benchmark function of the OWS:
    A. Distance from rim of access cover to bottom of structure
    B. Distance from rim of access cover to top of sludge layer
    C. Depth of sludge layer (C = A – B)
    D. Distance from rim of access cover to the oil/water interface
    E. Distance from rim of access cover to the top of the liquid surface
    F. Depth of oil layer (F = D – E)

OWS Cleaning Procedures

Cleaning of the OWS is required when there has been a spill to the OWS that exceeds ten gallons of oil, one gallon of detergent or solvent, or any material prohibited by the owner of the sanitary sewer. Cleaning is also required when the levels of accumulated sludge and/or oil meet the manufacturer's recommended levels for cleaning. This will vary based on the manufacturer of the OWS. If the manufacturer's recommendations are unknown, the following guidelines are appropriate for determining when to clean:

1. When sludge accumulates to 25% of the wetted height of the separator compartment; or
2. When oil accumulates to 5% of the wetted height of the separator compartment; or
3. When 75% of the retention capacity of the OWS is filled.

Cleaning should be performed a minimum of once per year. When cleaning is required, it shall be performed by licensed OWS maintenance companies. Materials removed from the OWS must be disposed of in accordance with Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.

Documentation of Cleaning and Service

The operator of the premises where the OWS is located shall maintain a log describing the date and type of all inspections, service and maintenance performed in connection with the Separator. Documentation shall include the identity of the inspector (or the identity of the person or entity that performed the service and/or maintenance). Records shall also document the amount of residue removed from the OWS each time it was cleaned, and how removed materials were disposed. This documentation shall be maintained for a minimum of six years.

Attachments

Quarterly OWS Inspection Checklist

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STANDARD OPERATING PROCEDURE 4:

MANAGEMENT OF SAND AND DEICING CHEMICALS AT DPW FACILITIES

Purpose

To ensure that sand and deicing chemicals are managed consistent with environmental regulations.

Responsibility

It is the responsibility of the Highway Department General Foreman to report leaks in sheds/tanks and other problems to the Director of Operations. It is the Highway Department's General Foreman's responsibility to ensure that spilled deicing chemicals are cleaned up and put back to the storage area within 48 hours.

The Highway Superintendent is responsible for ensuring regular inspections of the sand and deicing chemical storage areas during regular inspections.

Policy

Deicing chemicals (i.e. salt, calcium chloride, etc.) shall be stored in storage sheds or tanks in a manner that minimizes the potential for runoff. All deicing chemicals shall be covered when not in use. Sand piles shall be bermed to minimize runoff. During handling, sand and salt which fall outside of the storage areas will be swept back to the storage areas within 48 hours of the activity, to minimize runoff.

During regular inspections, the sand and deicing chemical storage areas shall be inspected by the Highway Department General Foreman or designee to ensure that runoff is minimized. All findings during an inspection shall be sent to the Highway Superintendent.

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STANDARD OPERATING PROCEDURE 5:

THE HANDLING AND STORAGE OF STREET SWEEPINGS AT LANDFILL

Purpose

To provide guidance on the handling and storage of street sweepings.

Street sweepings are defined as sand and soil generated during the routine cleaning of roadways. Street sweepings may also contain leaves and other miscellaneous solid waste. Street sweepings do not include the material swept from the road surface that has resulted from hazardous materials spills or material cleaned from other roadway structures such as catch basins or other drainage structures.

This policy does cover sweepings collected by Highway Department contractors. Highway Department contractors are fully responsible for the reuse and/or disposal of sweepings according to Department of Environmental Protection (DEP) policy. Under no circumstances are private contractors allowed to store sweepings on Highway Department property.

Responsibility

It is responsibility of the Highway Department General Foreman and his designee (Highway Department Loader Operator) to ensure that sweepings are handled in compliance with this policy and other applicable state and federal regulations.

Policy

This policy is based upon the DEP Policy #94.092 "Reuse and Disposal of Street Sweepings." The DEP policy is attached and must be followed as part of this policy.

Street Sweepings are to be stored in a labeled accumulation area at a Highway Department facility that ensures the prevention of dust, erosion, and off-site migration. This is generally accomplished by marking the perimeter of the stockpile of Sweepings with signage and linked jersey barriers/berms, and locating the stockpile in an area where the grades do not allow for the off-site migration of stormwater from the stockpile.

The sweepings must not be stored within the 100-foot Buffer Zone of a Wetland, within a Wetland Resource Area or within the 200 foot Riverfront Area.

Sweepings collected from urbanized areas (non-residential areas) should be stockpiled separately from sweepings collected from other areas. These two types of street sweepings should be stored in separate accumulation areas so that non-urbanized sweepings can be more easily reused. Storage of street sweepings is temporary. Street sweepings should not be stored for longer than one year.

Street Sweeping Reuse and Disposal

As indicated in the DEP policy, there are options for reuse that require no analytical testing or DEP oversight. Options for reuse (construction fill, compost additive, reapplication, etc.) will be evaluated on a case by case basis by the Highway Superintendent.

Disposal of street sweepings as solid waste or as cover material is allowed at permitted solid waste landfills.

Street sweepings collected from urban areas must have analytical testing conducted before reuse. If testing is required for disposal or reuse, each stockpile of sweepings must be tested (1 sample/1000 cubic yards).

Attachments

DEP Policy #94.092 “Reuse and Disposal of Street Sweepings”

APPENDIX F

Facility Audit Findings and Recommendations

ENVIRONMENTAL PARTNERS

June 30, 2020

Mr. Michael Dean, P.E.
Town Engineer
Milford Office of Planning & Engineering
52 Main Street
Milford, MA 01757

RE: NPDES Phase II Stormwater Assistance
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Report

Dear Mr. Dean,

In accordance with our February 2020 contract for professional engineering services, Environmental Partners (EP) is forwarding this report on our audit of municipal facilities for compliance with the Town of Milford's National Pollution Discharge Elimination System (NPDES) Stormwater General Permit. Implementing Best Management Practices (BMPs) aimed at ensuring proper pollution prevention and good housekeeping for municipal operations is one requirement (Part 2.3.7.b.iii) of the 2016 General Permit.

On June 23rd, July 2nd, and July 9th, EP staff performed facility audits at sixteen (16) municipal facilities and ten (10) parks and recreation areas owned and operated by the Town of Milford.

The municipal buildings visited include:

- Animal Control
- Asylum St Storage Area
- Brookside Elementary School
- Highway Department
- Library
- Memorial Elementary School
- Milford Fire Department Headquarters
- Milford High School
- Milford Housing Authority
- Milford Police Department
- Milford Wastewater Treatment Facility
- Milford Senior Center
- Stacy Middle School
- Town Hall
- Transfer Station

- Woodland Elementary School
- Youth Center

The parks and recreation areas visited include:

- Casey Memorial Swimming Pool
- Draper Memorial Park
- Fino Field & Annex, Fino Field Pool, Votolato Field, and Upper Charles River Trail Parking
- Louisa Lake Recreational Area and Upper Charles River Trail Parking
- Milford Hopkinton Charles River Trail Parking
- Plains Park, Rosenfeld Field, and Inglesi Field
- Prospect Height Park
- Tomaso Park
- Town Park
- Vernon Field

The audit process included touring the buildings and grounds of each property, observing accessible areas, reviewing available documents, and interviewing available facility contacts. Observations related to pollution prevention and good housekeeping, stormwater management, areas of erosion, water ponding, impervious surfaces, storage containers, and stockpile areas were documented in writing, in mobile data collection forms, and by photograph.

Due to COVID-19 restrictions, EP was unable to thoroughly observe the interiors of the facilities. The garages and sheds at the Highway Department, Fire Station, Milford Housing Authority, and Wastewater Treatment Plant were the only interior spaces thoroughly audited.

The municipal facilities audited in the Town of Milford are generally in compliance with respect to the Pollution Prevention and Good Housekeeping minimum control measure of the Stormwater General Permit. EP has provided recommendations for potential facility improvements to manage stormwater runoff from the facilities described in this report.

A table summarizing our findings from the audits is provided in Appendix A. The table lists the facilities where audits were performed and, where applicable, identifies instances of non-conformance with the goals of the Stormwater General Permit. Recommendations for corrective action are also provided for instances of non-conformance. Photographs for many of the identified instances of non-conformance or potential upgrades are shown in Appendix B.

During site visits, stormwater assets (catch basins, drain manholes, MS4 outfalls, outlets, inlets, and drain pipes) were observed. Facilities for which there were unmapped stormwater assets found during the site visits are noted in Appendix A.

Corrective actions taken in response to the report should be documented in writing by the facility managers of the individual facilities, with a copy forwarded to you at the Engineering Division to be kept on file with other NPDES Stormwater Permit compliance documentation.

We very much appreciate working with the Town of Milford on this project. Should you have any questions or require additional information, please do not hesitate to us.

Sincerely,

Environmental Partners Group, Inc.
Robert J. Rafferty, P.E.
Principal / Senior Project Manager
P: 617.657.0277
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Environmental Partners Group, Inc.
Natalie M. Pommersheim
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P: 617.657.0257
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CC: Scott Crisafulli, Highway Surveyor
James Asam, Parks and Recreation Administrator
Scott Turner, Environmental Partners
Bill Watts, Environmental Partners

Figures: 1. Municipal Facility Audit Map

Appendices: A. Municipal Facility Audit Summary

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."

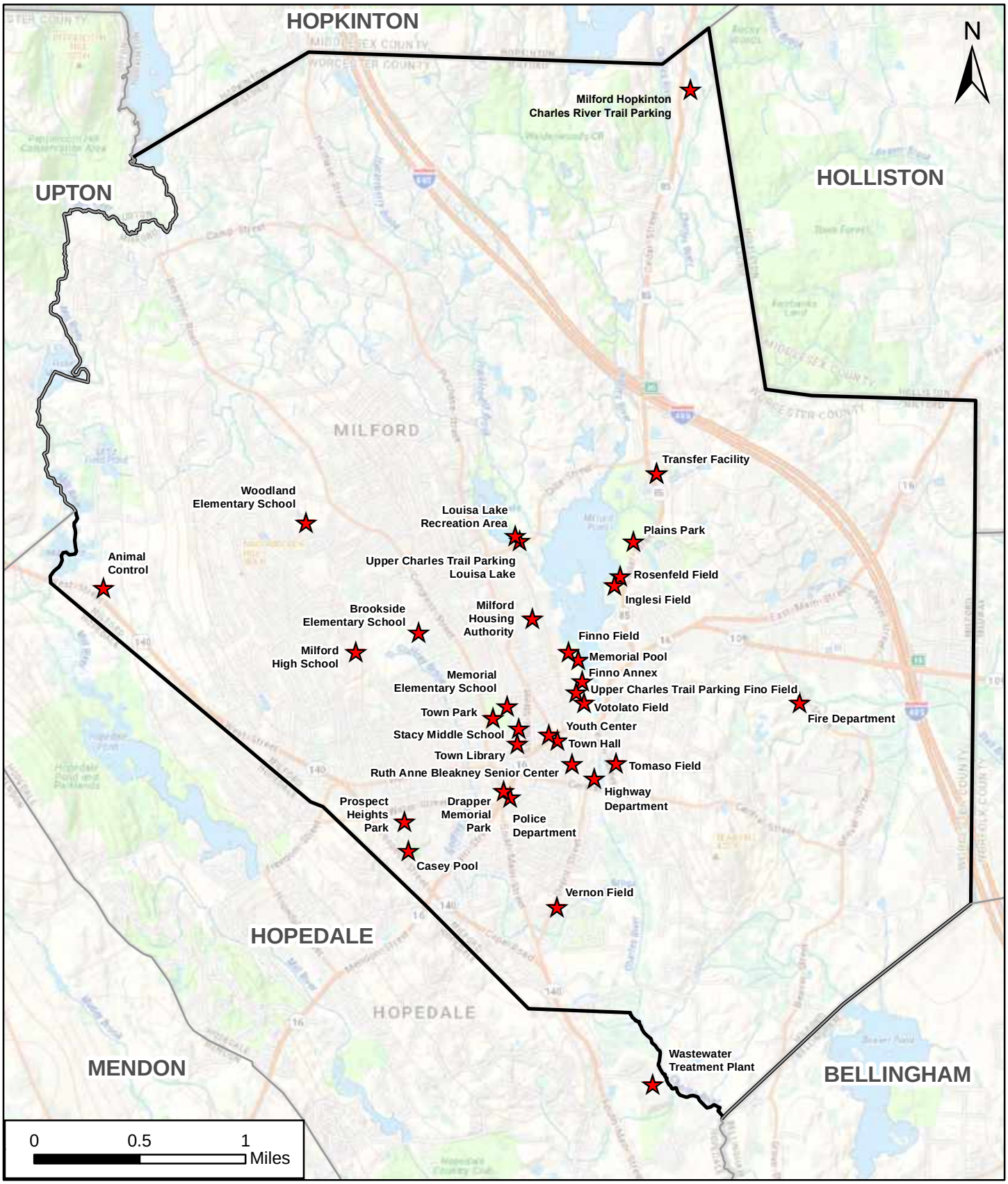
Printed Name Scott J. Crisafulli

Signature Scott J. Crisafulli

Date 1-6-21

Figure 1:

Municipal Facility Audit Map



ENVIRONMENTAL PARTNERS

Figure 1
Municipal Facility Audit Map
Milford, Massachusetts

I:\Milford.311\FY20 Stormwater\Facility Audits\Figures\MXDs\Figure 1 - Municipal Facility Audit Map.mxd

Appendix A:

Municipal Facility Audit Summary

ENVIRONMENTAL PARTNERS

Town of Milford, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (June 19, July 2, and July 9, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Animal Control	3 Fiske Mill Rd	Animal Control	N/A	N/A	N/A
Asylum Street Storage Area	Asylum St	DPW Storage	Dumpsters uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Maintain stockpiles of street sweepings and other materials consistent with MS4 permit requirements in order to reduce/eliminate sediment from eroding into stormwater management systems and/or wetlands.	N/A
Brookside Elementary School	110 Congress St	School	Dumpsters uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Consider developing a long-term storage location for plastic turf infill materials currently stored near the generator that eliminates potential entry of materials into the stormwater system and/or wetlands. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Casey Memorial Pool	41 Prospect St	Community Pool	N/A	N/A	N/A
Draper Memorial Park	238 Main St	Park	N/A	N/A	N/A
Fino Field & Annex, Votolato Field, Fino Field Pool, and Upper Charles River Trail Parking	Granite St	Park	N/A	Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Fire Department Headquarters	21 Birch St	Fire Station	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Consider utilizing a flammables storage locker for motor oil and other flammables.
Highway Department	30 Front St	DPW	Sand piles uncovered.	Maintain stockpiles of street sweepings and other materials consistent with MS4 permit requirements in order to reduce/eliminate sediment from eroding into stormwater management systems and/or wetlands. Consider implementing a regular cleaning schedule for the wash bay floor drain to avoid overflow of wash water in to nearby wetlands and river. Unclog garage floor drain. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Organize solvents, oils, greases, and other chemicals and store neatly based on chemical compatibility. Gas cans/flammables should be stored in flammables storage lockers. Consider purchasing additional flammables storage lockers as needed.
Louisa Lake and Upper Charles River Trail Parking	24 Dilla St	Park	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

ENVIRONMENTAL PARTNERS

Town of Milford, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (June 19, July 2, and July 9, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Memorial Elementary School	12 Walnut St	School	Dumpsters uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Milford High School	31 W Fountain St	School	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Milford Hopkinton Charles River Trail Parking	467 Cedar St	Park	N/A	N/A	If not already doing so, encourage residents to refrain from dumping waste in woods near parking lot, including lawn and refuse bags.
Milford Housing Authority	45 Birmingham Ct	Housing Authority	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Verify that gasoline and other flammables are stored in accordance with EPA requirements and DEP guidelines (guidelines attached as Appendix C). Consider purchasing additional flammables storage lockers to store all gas/oil/aerosol containers in maintenance garage.
Milford Town Library	80 Spruce St	Library	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Verify that gasoline and other flammables are stored in accordance with EPA requirements and DEP guidelines (guidelines attached as Appendix C). Consider purchasing flammables storage lockers for maintenance shed.
Plains Park, Rosenfeld Field, and Inglesi Field	90 Cedar St	Park	N/A	Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Police Department	250 Main St	Police Station	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Prospect Heights Park	36 Prospect Heights Park	Park	N/A	N/A	N/A
Senior Center	60 North Bow St	Council On Aging	Dumpsters uncovered. Stockpiles of brush and soil uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Ensure stockpiles are stored in accordance with MS4 permit requirements in order or reduce/eliminate stored salt from entering stormwater management systems. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

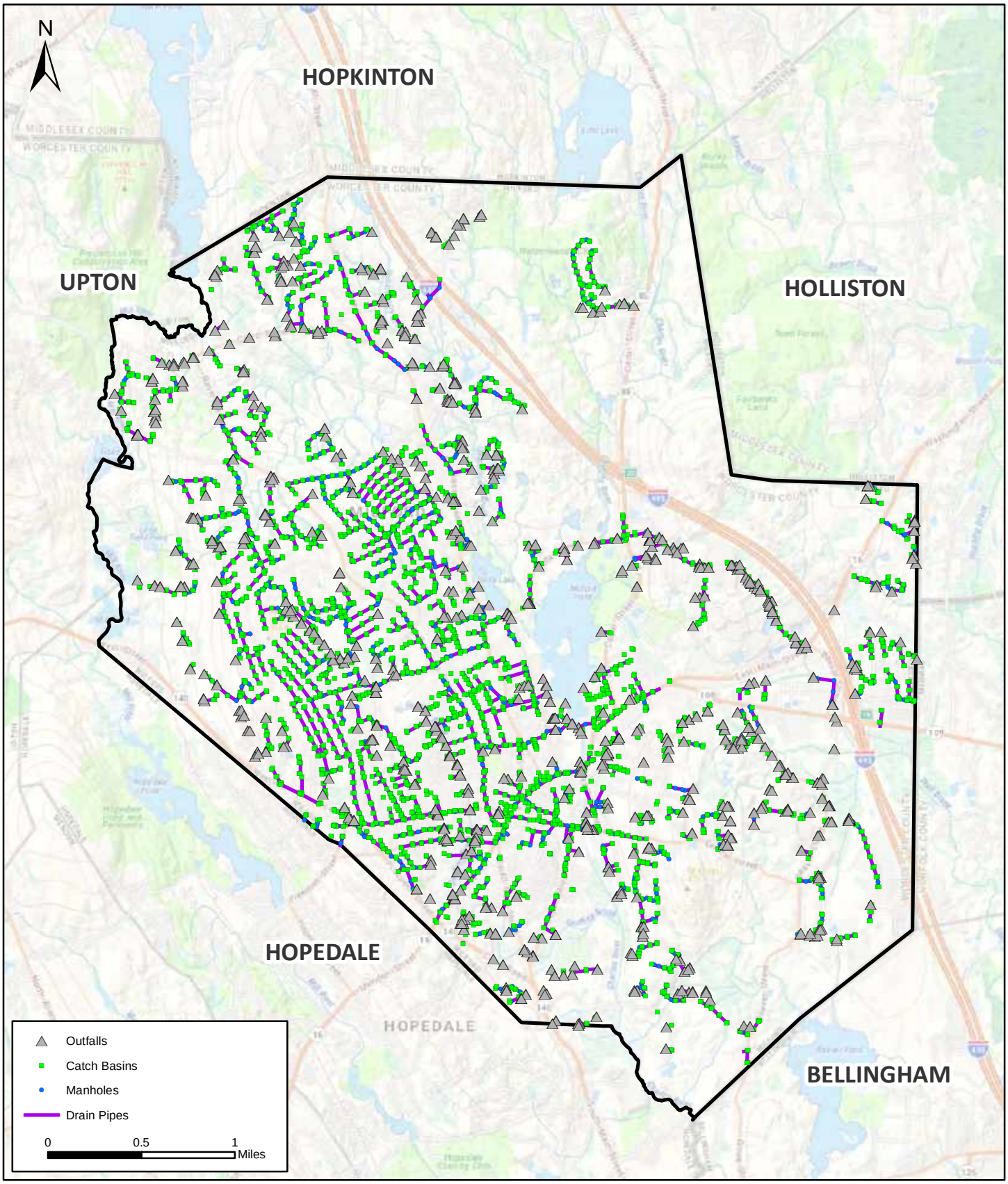
ENVIRONMENTAL PARTNERS

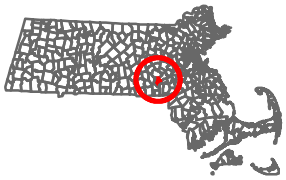
Town of Milford, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (June 19, July 2, and July 9, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Stacy Middle School	66 School St	School	N/A	Ensure salt storage in yellow container in front of school is stored in accordance with MS4 permit requirements in order or reduce/eliminate stored salt from entering stormwater management systems. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Tomaso Park	41 Beach St	Park	N/A	N/A	N/A
Town Hall	52 Main St	Town Hall	N/A	N/A	N/A
Town Park	69 Congress St	Park	N/A	Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	
Transfer Station	85 Cedar St	Transfer Station	Dumpsters uncovered. Batteries and refrigerators stored outside, uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Cover batteries and refrigerators. Organize the future transfer station on Asylum Street to reduce/eliminate sediment (sand piles) and sources of contamination (batteries, waste oil, equipment with coolant or fuel) from entering nearby woods and wetlands.	N/A
Vernon Field	Vernon St	Park	N/A	N/A	N/A
Wastewater Treatment Facility	226 S Main St, Hopedale, MA	Wastewater Treatment Plant	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Woodland Elementary School	10 N Vine St	School	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Ensure storage of green, blue, and black polymer bags near generator and transformer are stored in accordance with MS4 permit requirements.
Youth Center	24 Pearl St	Community Center	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

APPENDIX G

Stormwater Infrastructure Map





Appendix G. Stormwater Infrastructure Map
Milford, Massachusetts

ENVIRONMENTAL PARTNERS

I:\Milford.311\FY20 Stormwater\MS4 Infrastructure O&M Program\Appendices\AppG - Stormwater System.mxd

APPENDIX H

Street and Parking Lot Sweeping Log

Street and Parking Lot Sweeping Log

Date_______________ Precipitation in the last three days? Yes ☐ No ☐

Weather Today: _________________________________ Temperature:_______________

Supervisor/Crew Leader: __________________________

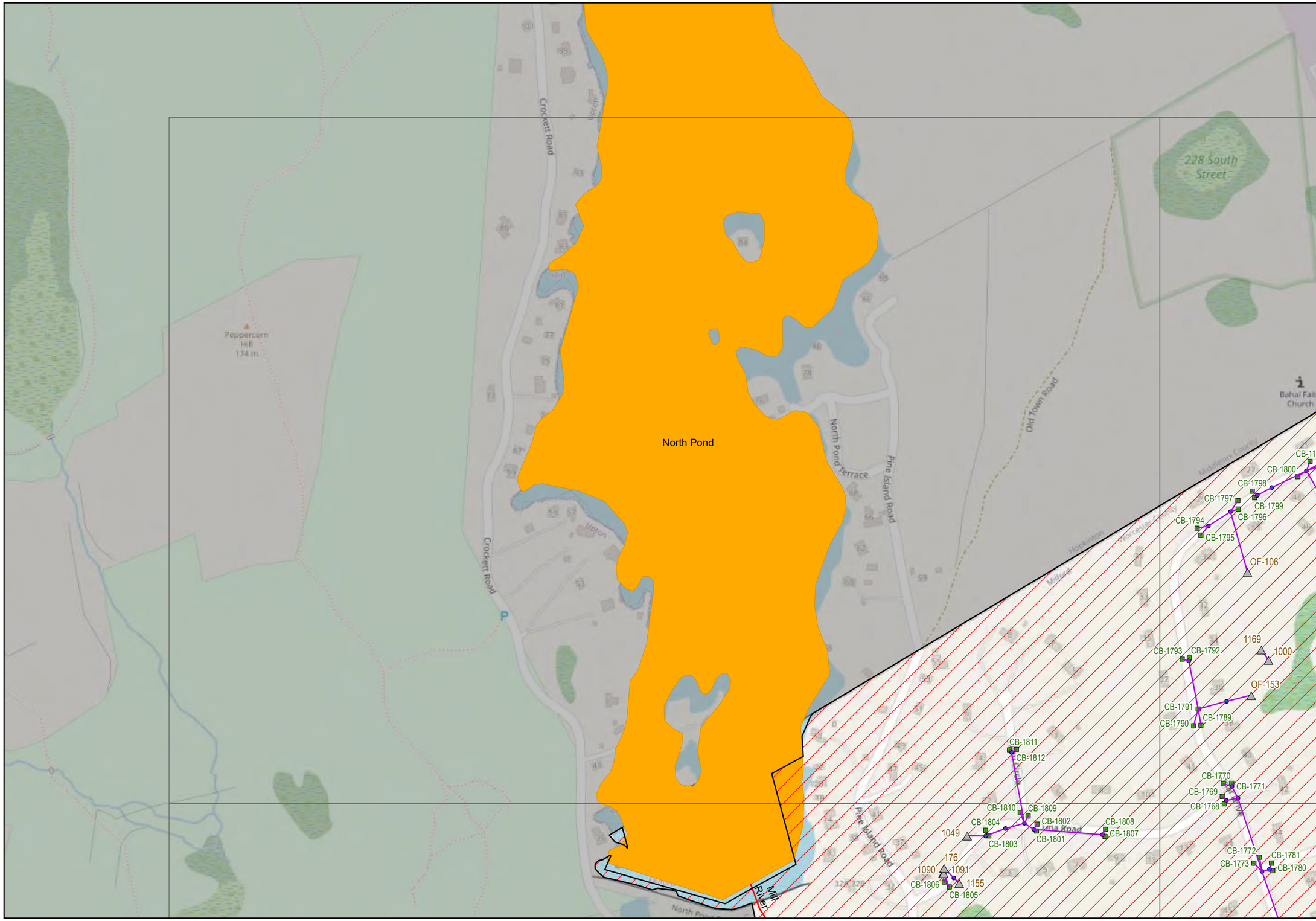
Street Swept (Name)	Miles	Potential Sources of Pollution	Comments
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ____ Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	
		____None ____Construction Activity ____Erosion ___Material Storage ___Equipment Storage ___Other	

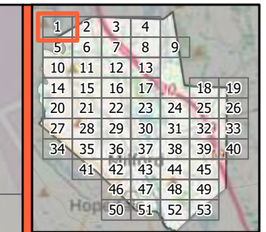
Total Sediment Accumulated from Route (estimated based on truck loads)________________cubic yards

Total Sediment Accumulated from Route (if weighed) ____________________tons

ATTACHMENT 1

Town of Milford Mapbook





Page Number: 1

Stormwater System

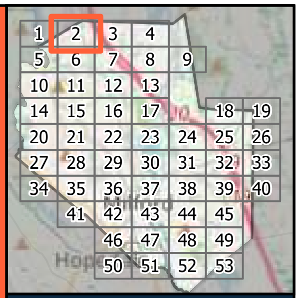
Milford, Massachusetts

- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

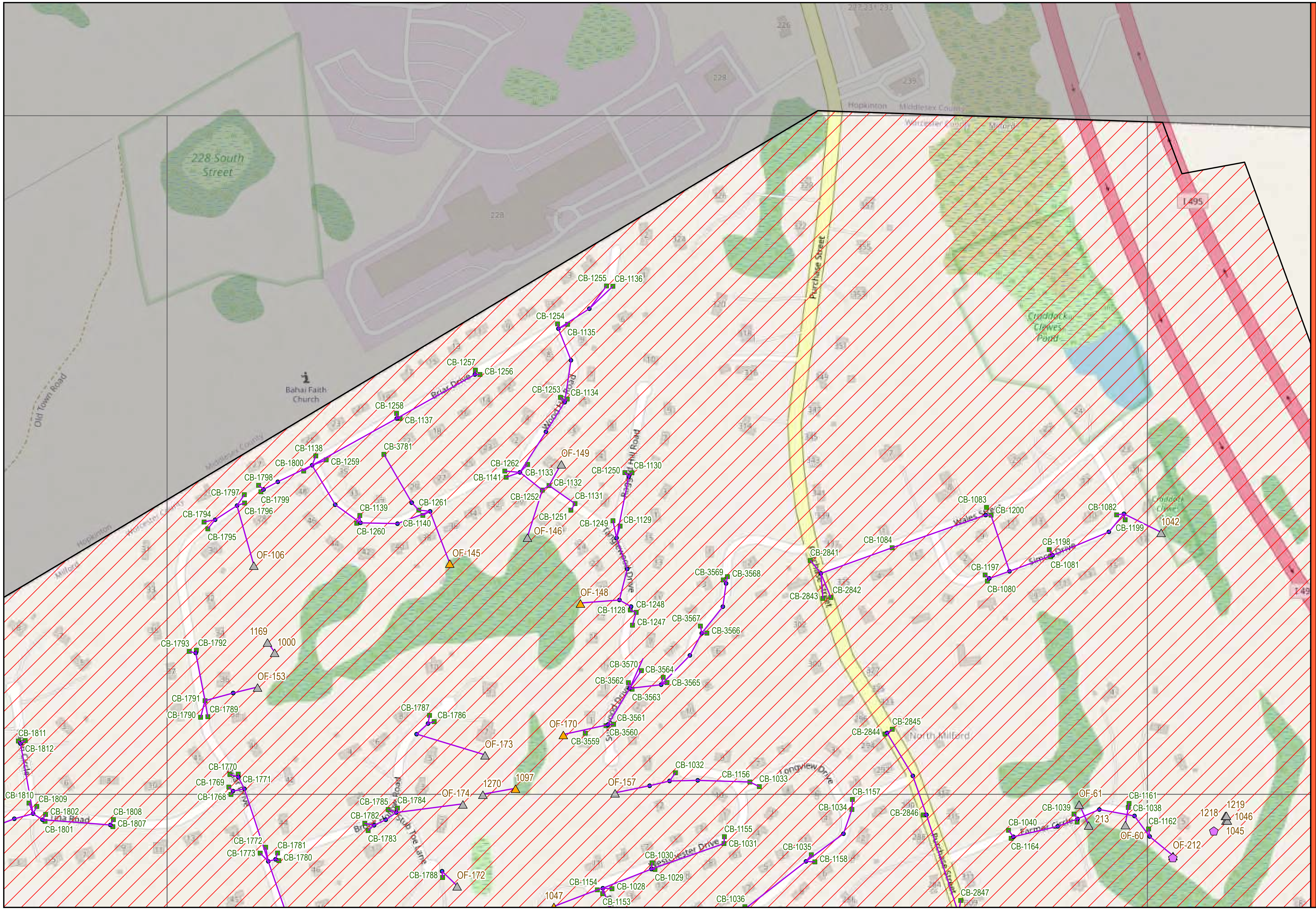
0 150 300 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

Milford, Massachusetts

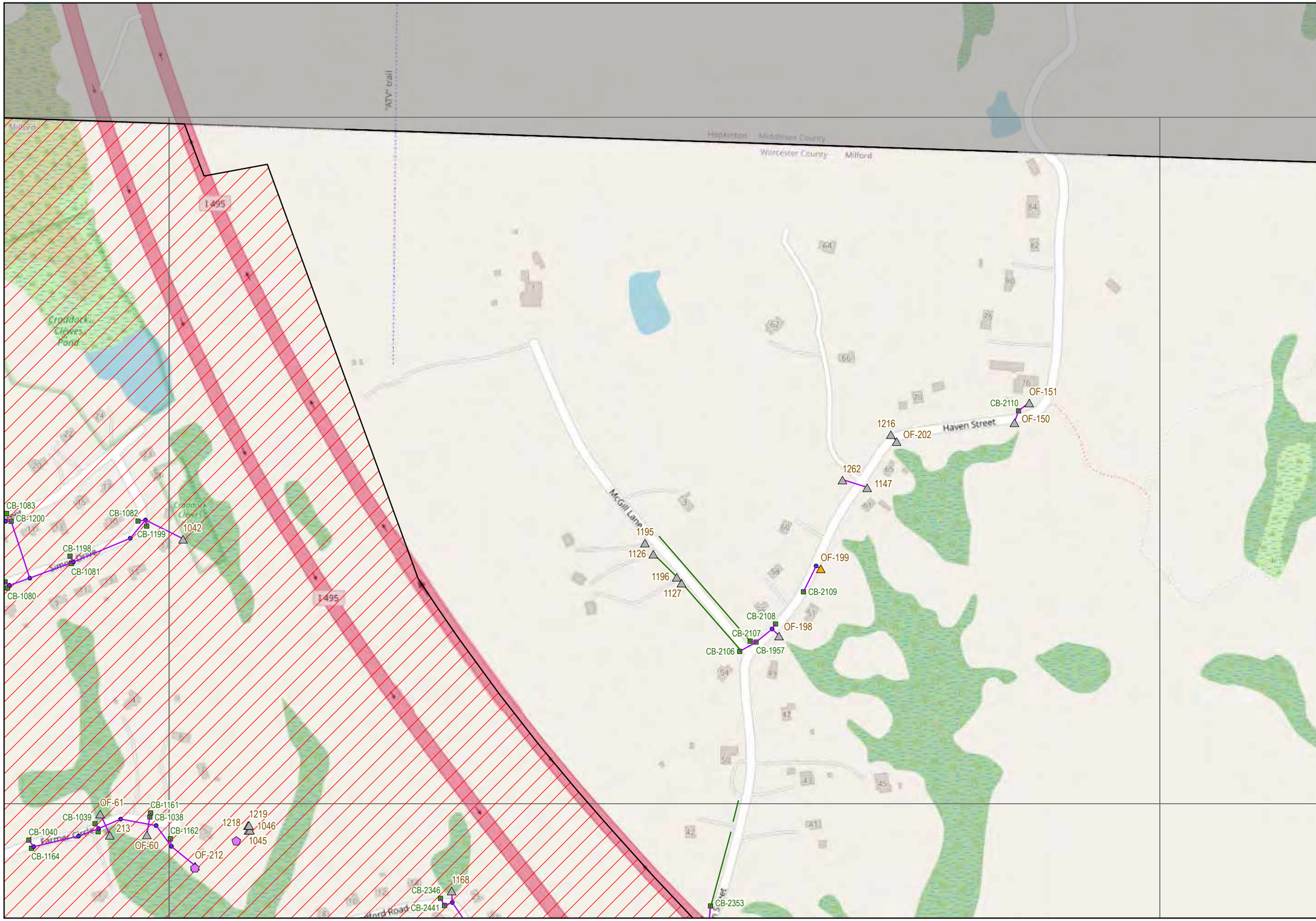


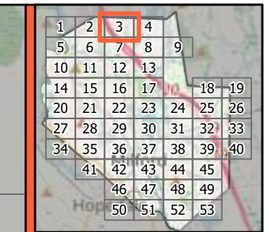
- ▲ Upland Outfalls
- ▲ MS4 Outfalls
- ● Manholes
- 🟩 Catch Basins
- Drain Pipes
- Swales
- ⬟ Stormwater BMPs
- ▨ MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

- Upland Outfalls
- MS4 Outfalls
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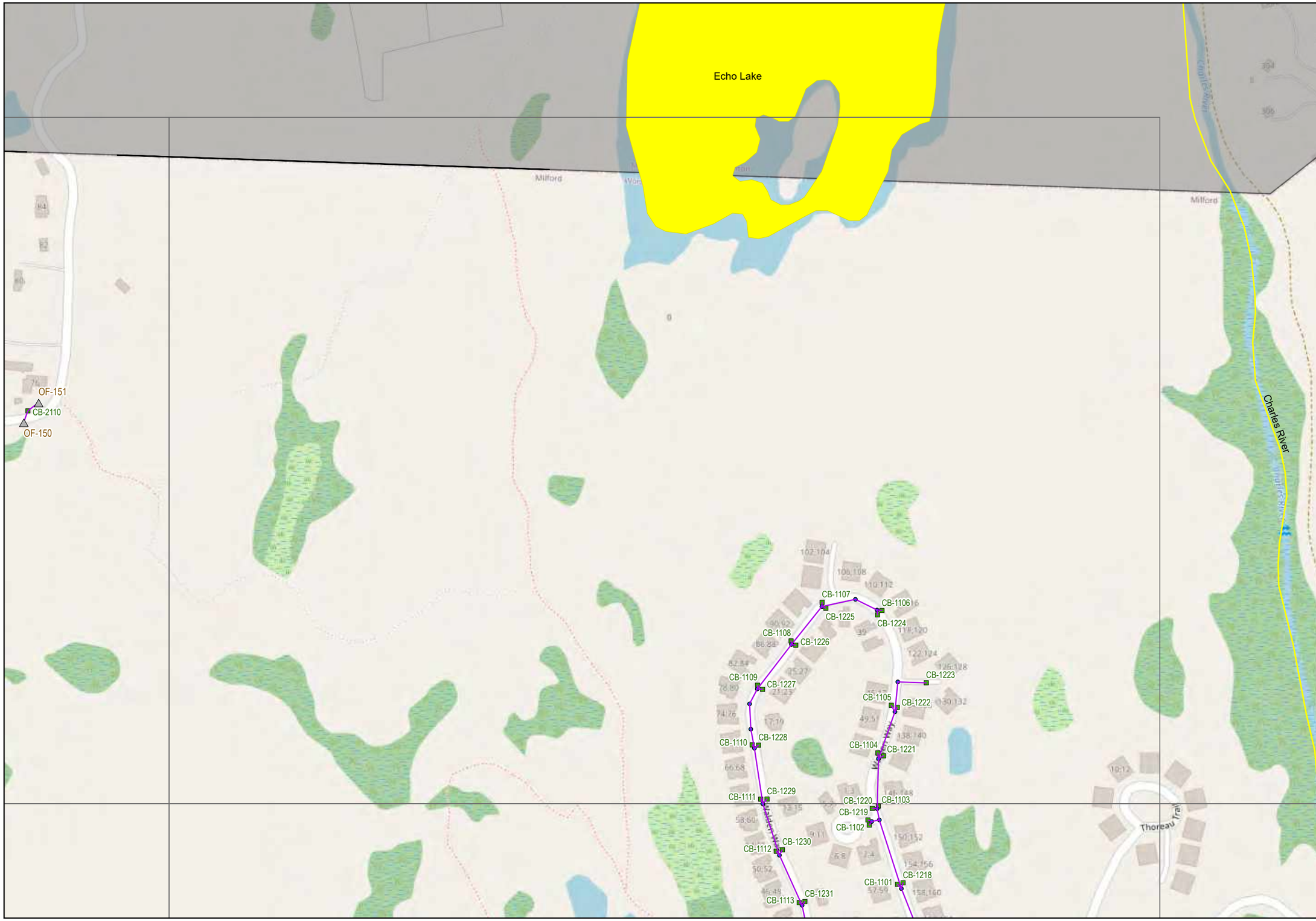
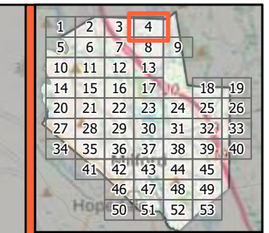
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

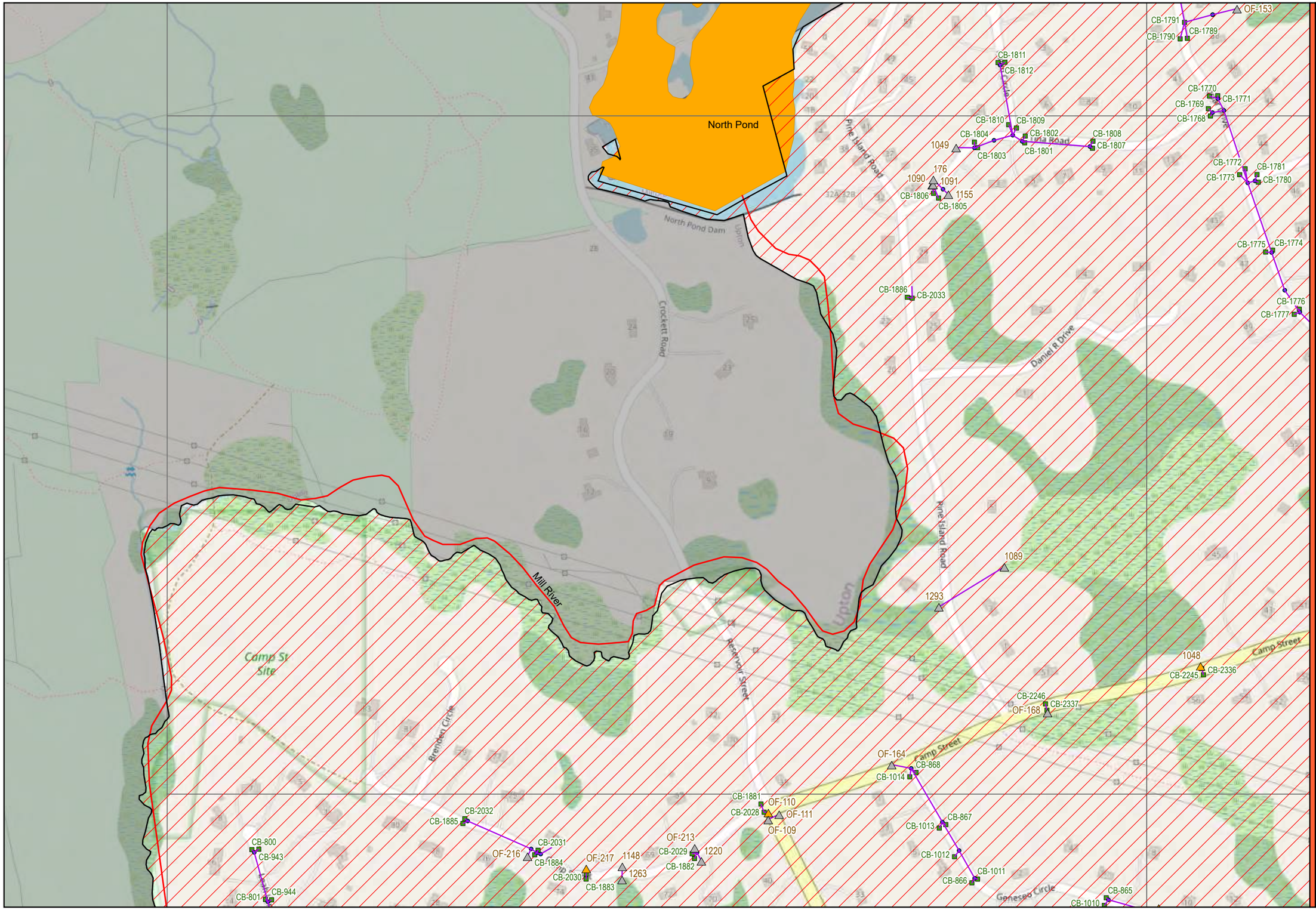
Milford, Massachusetts

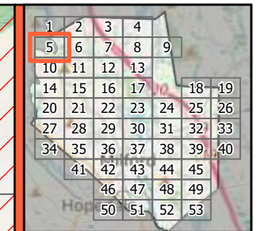
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

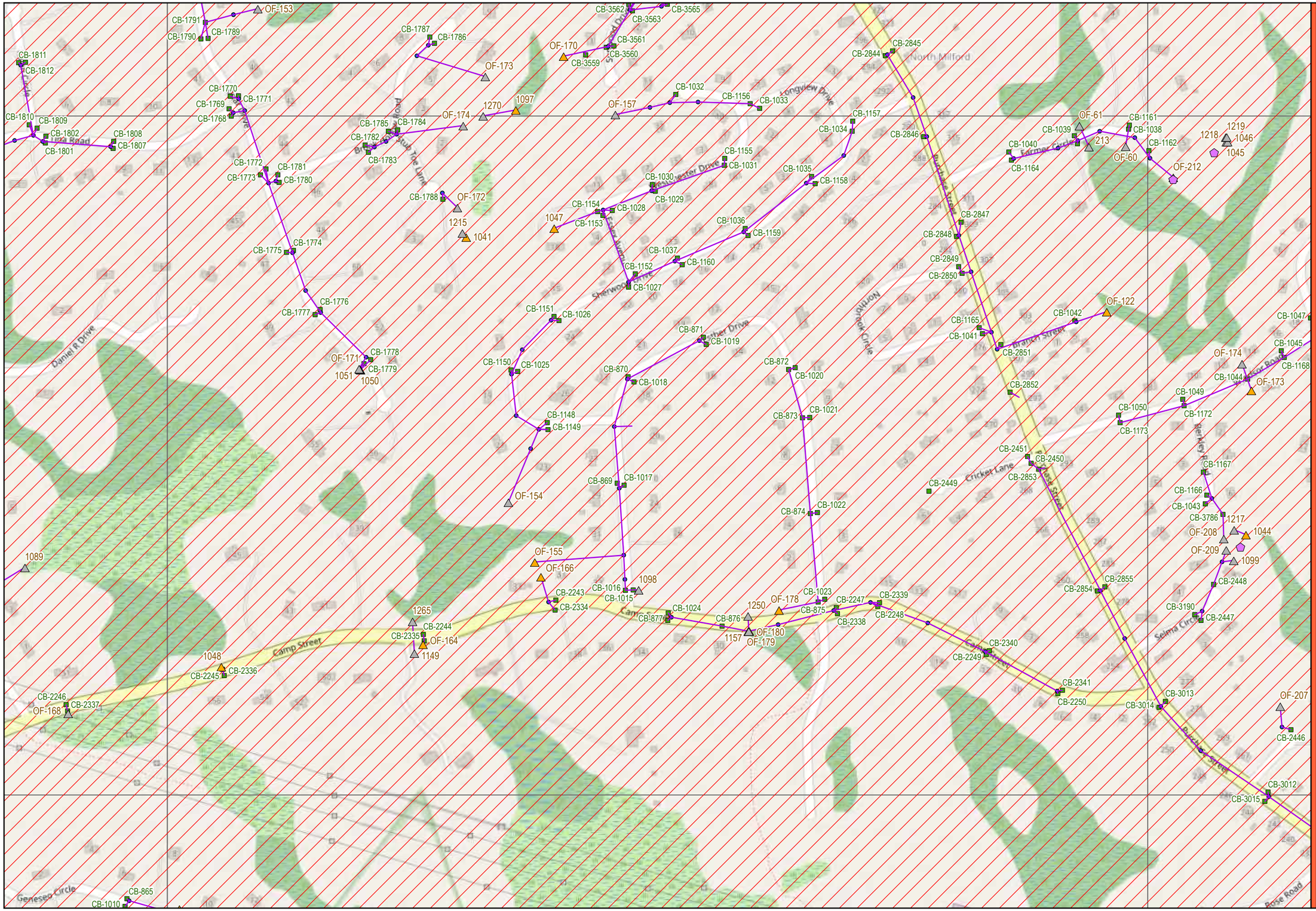
Milford, Massachusetts

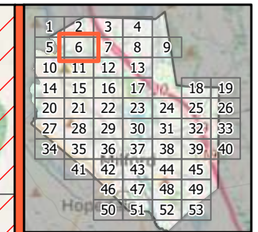
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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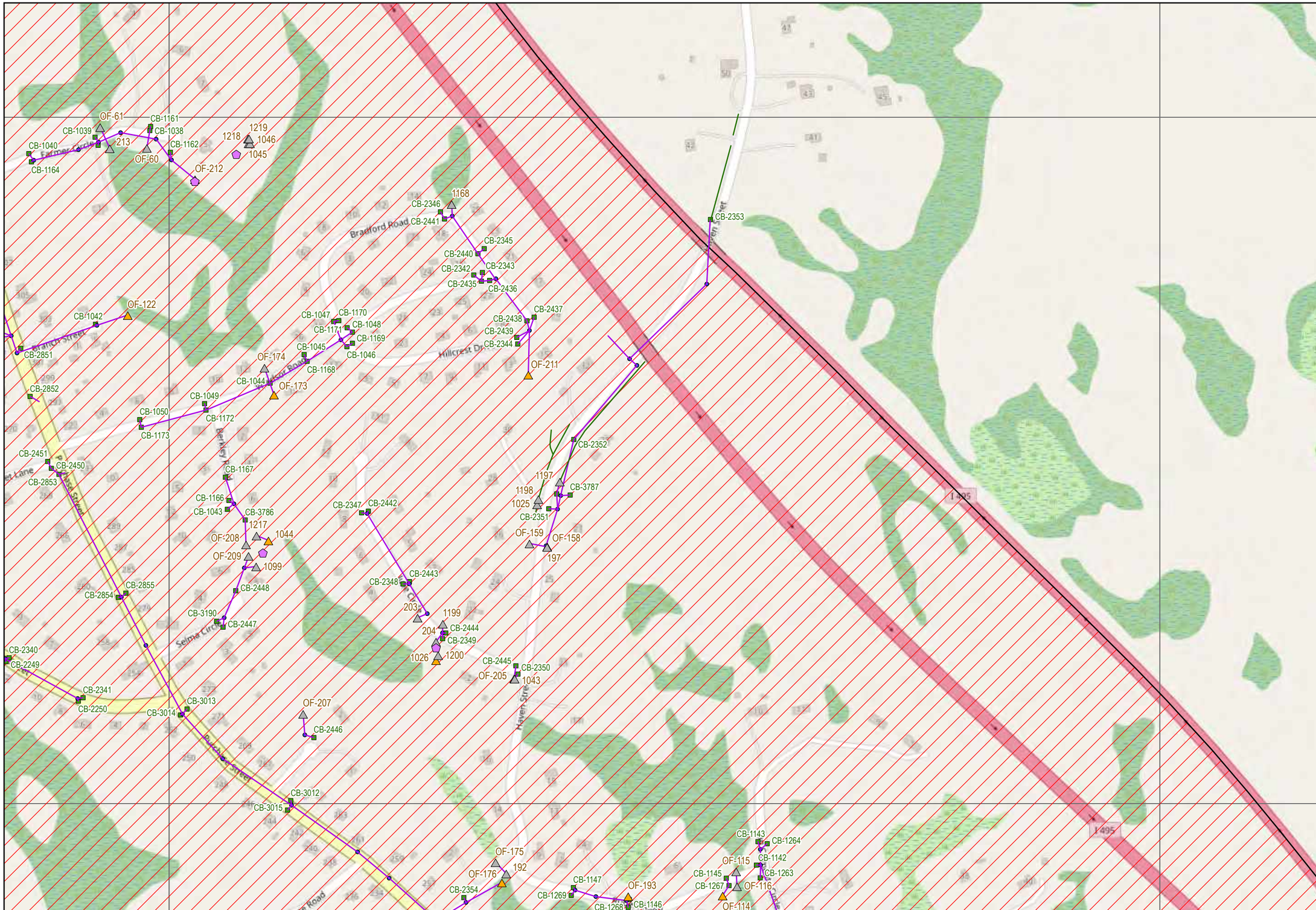
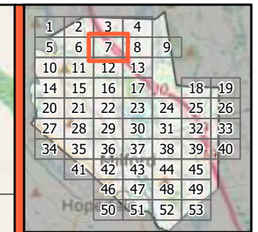
Stormwater System

Milford, Massachusetts

ENVIRONMENTAL PARTNERS





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Stormwater System

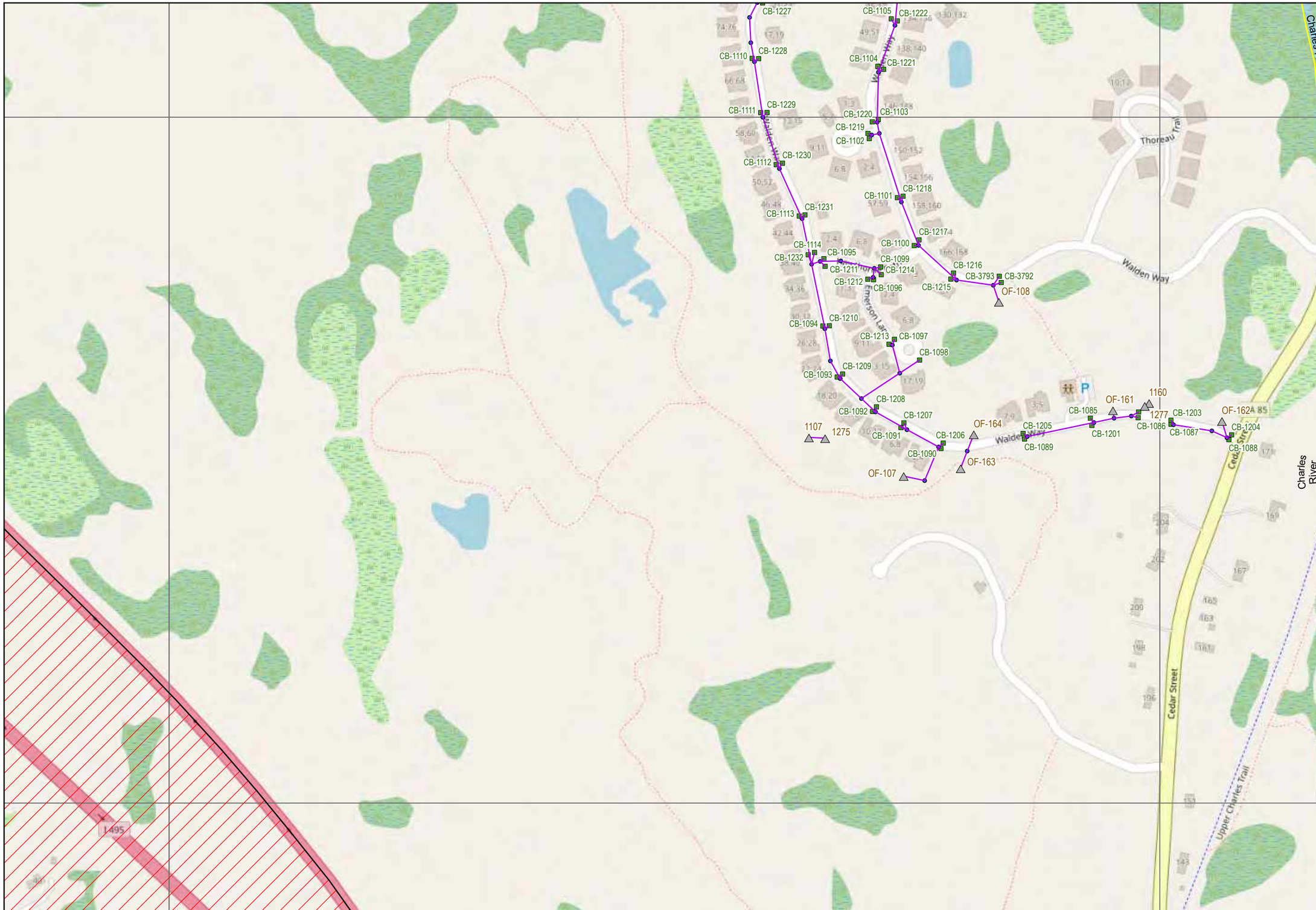
Milford, Massachusetts

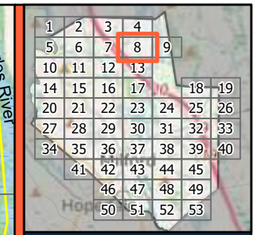
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

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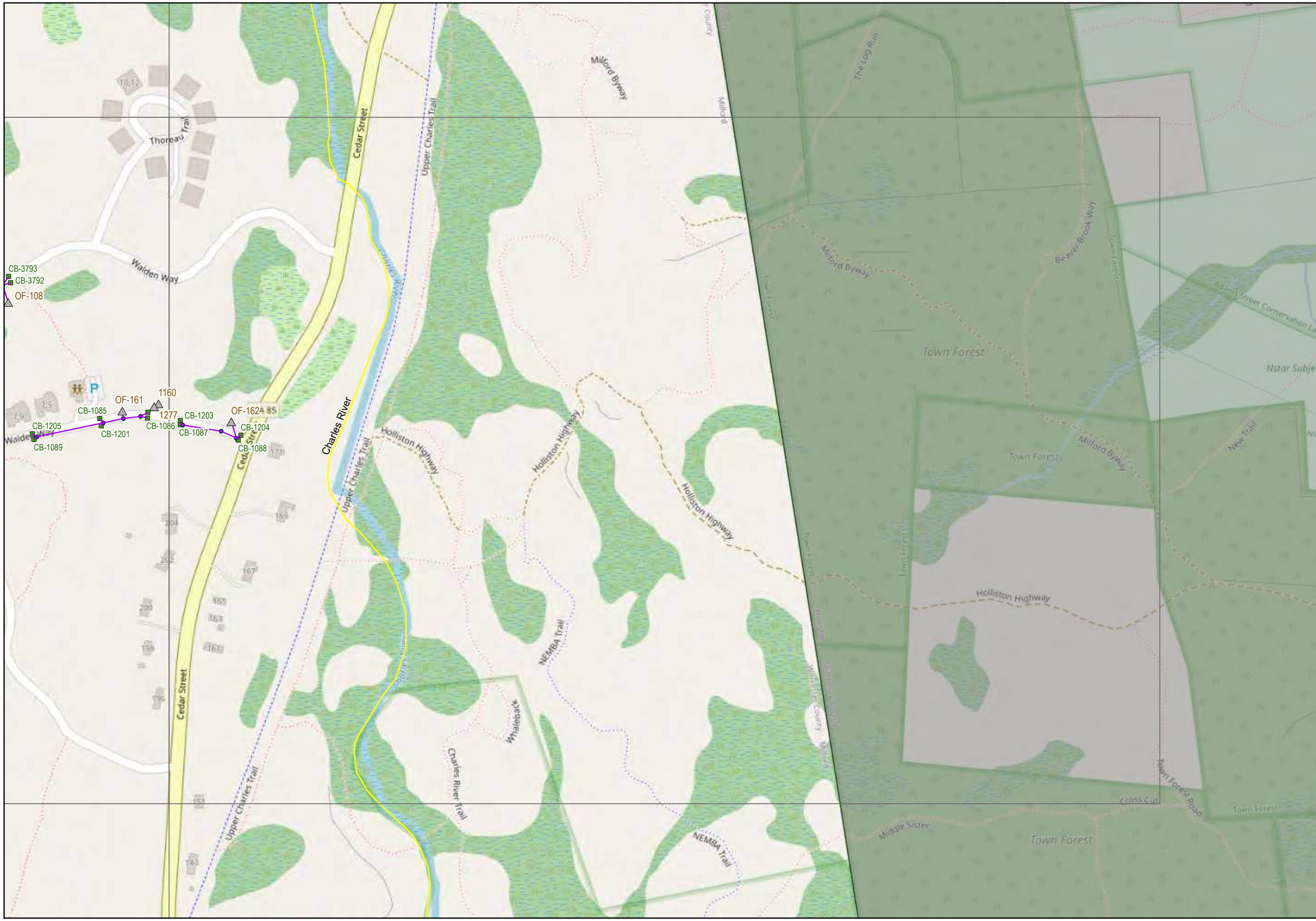
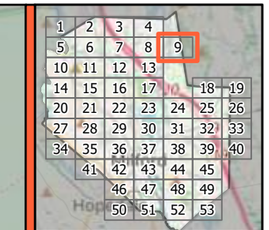
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

- Upland Outfalls
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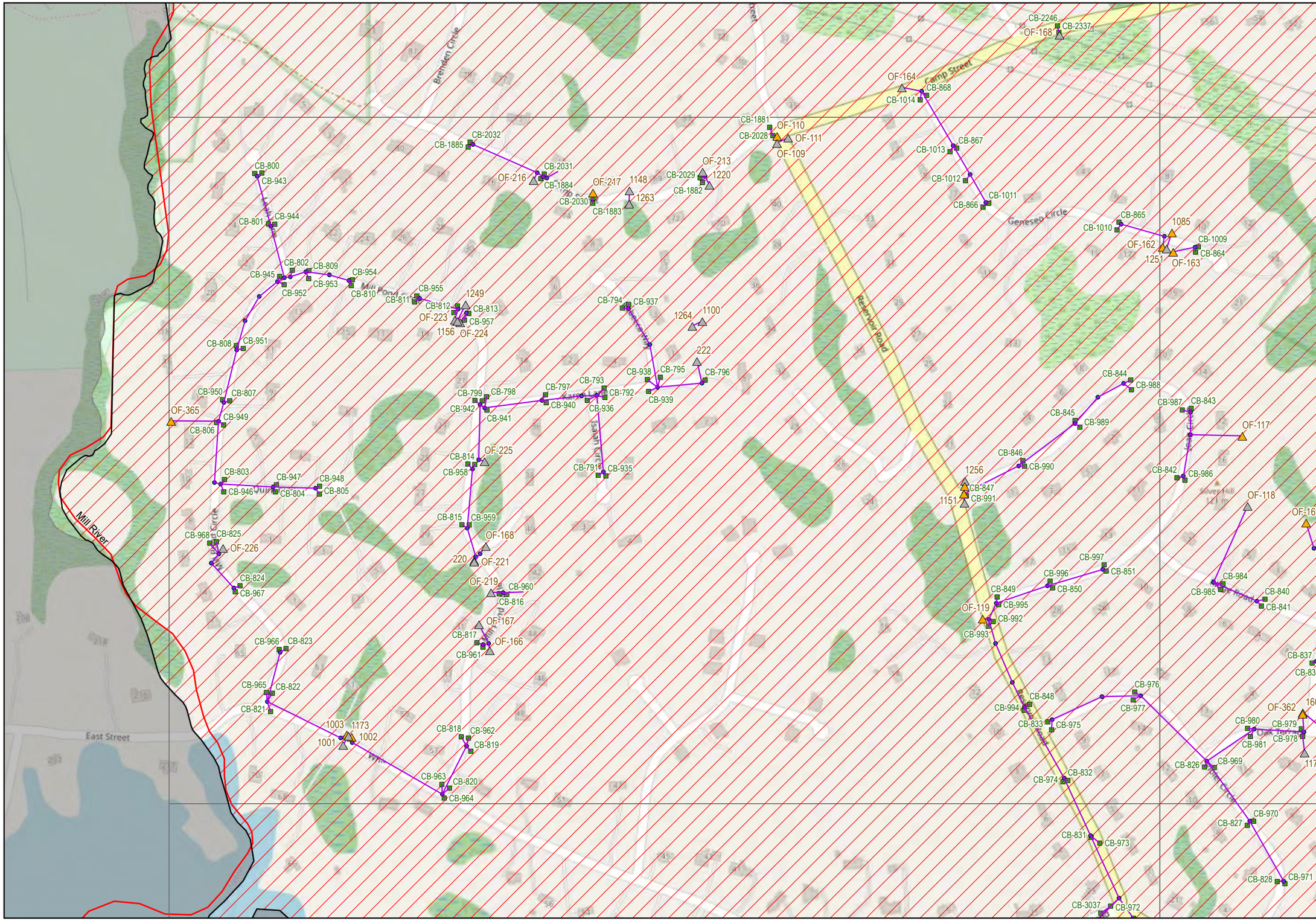
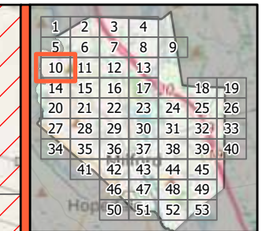
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

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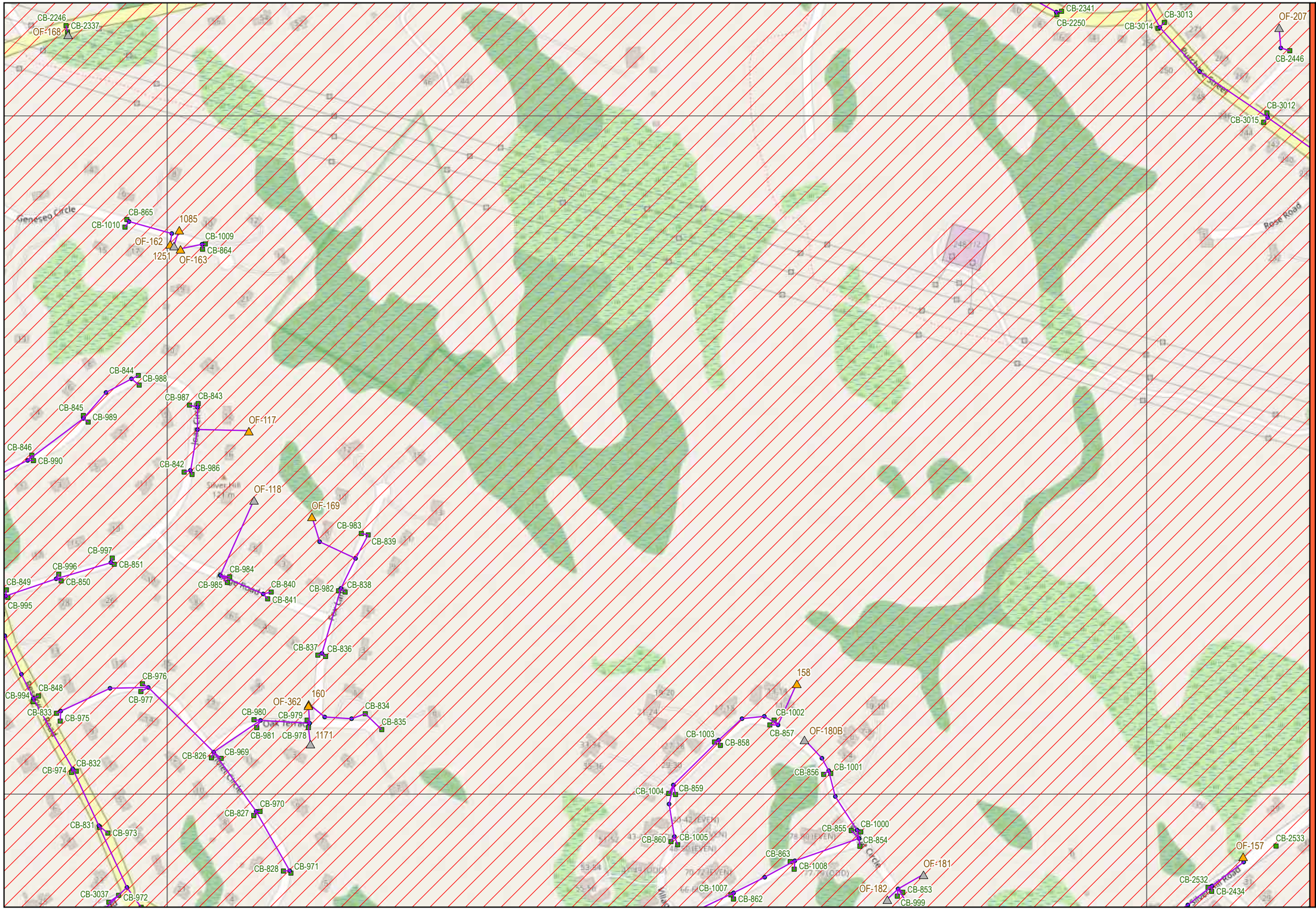
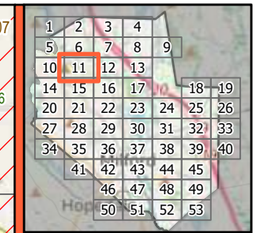
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

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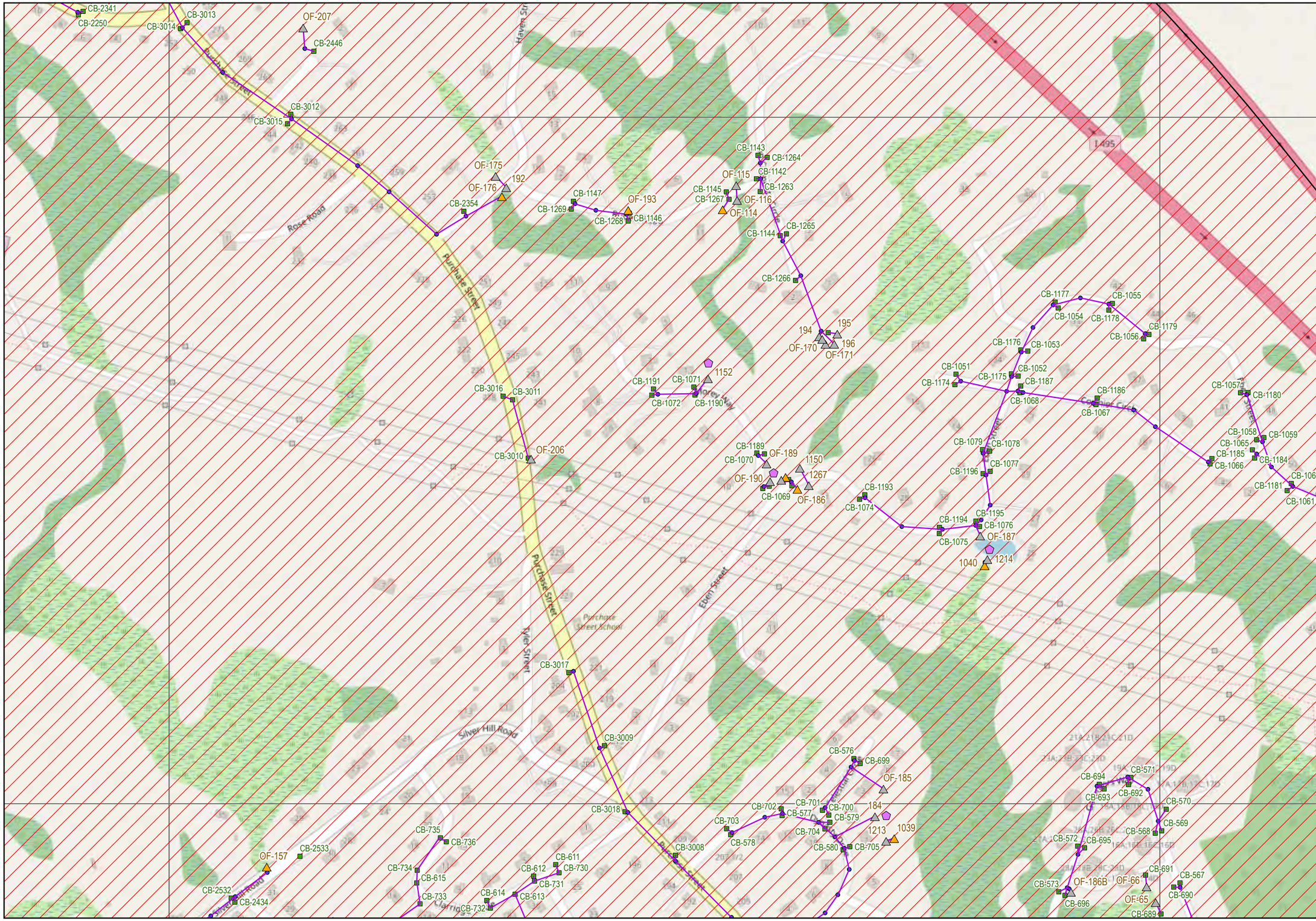
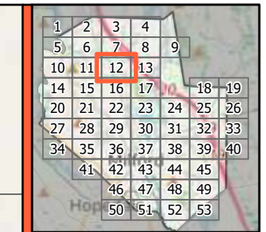
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

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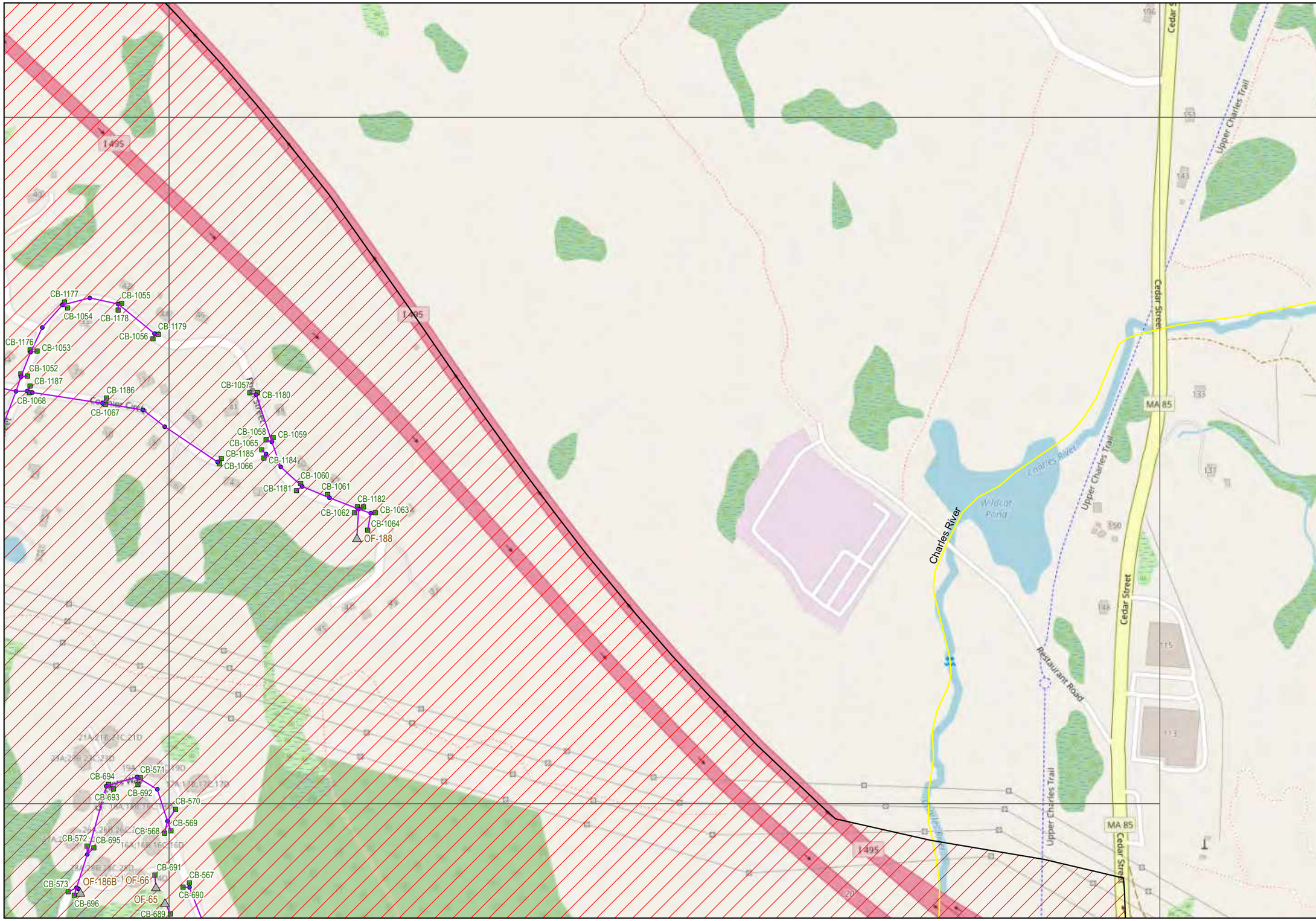
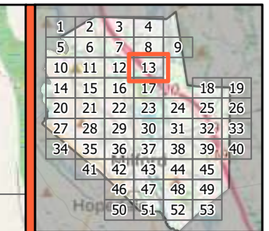
N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

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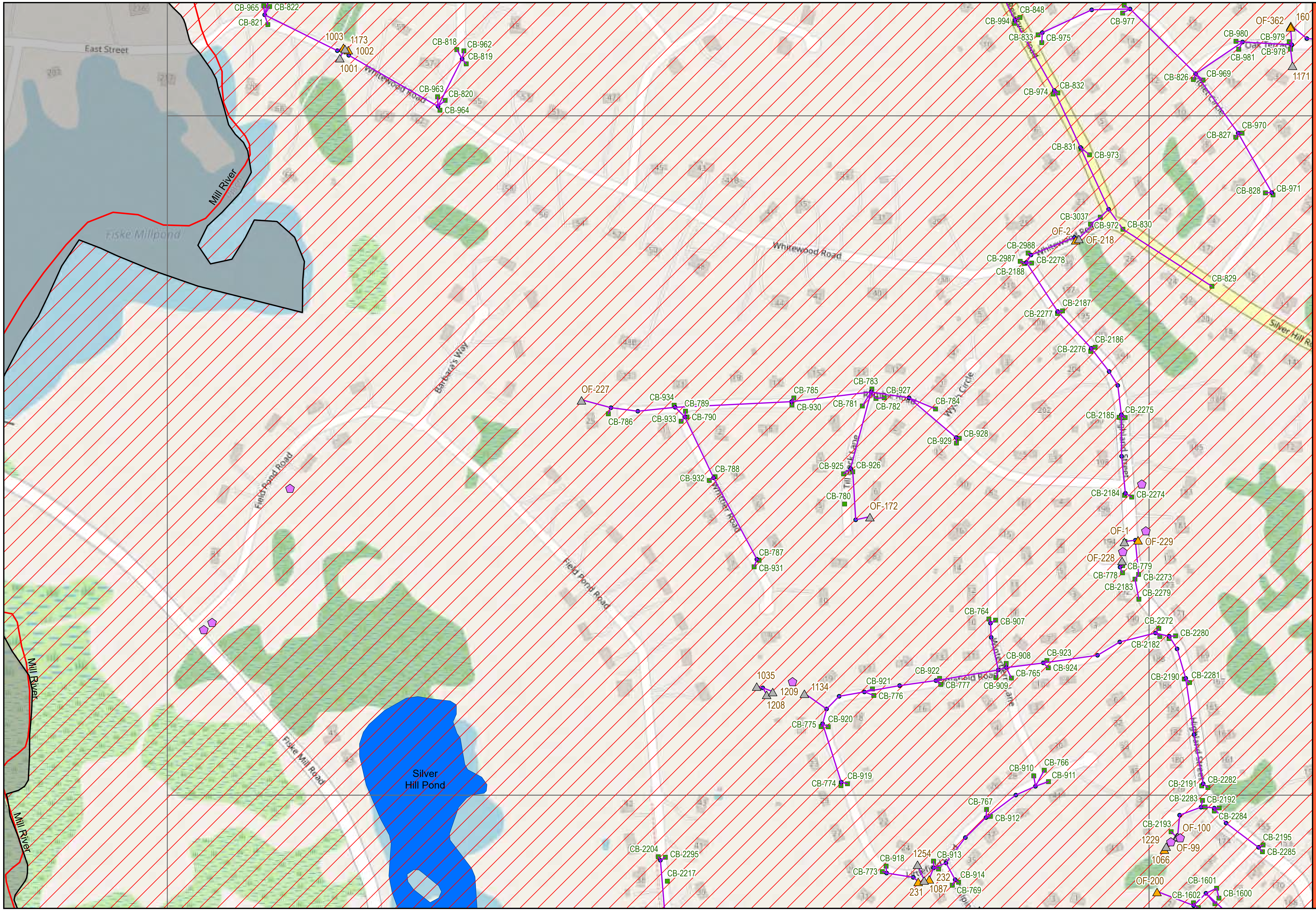
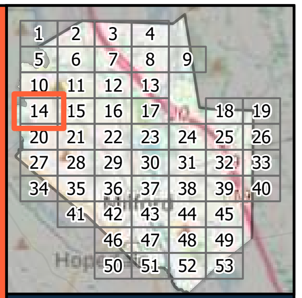
N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

- ▲ Upland Outfalls
- ▲ MS4 Outfalls
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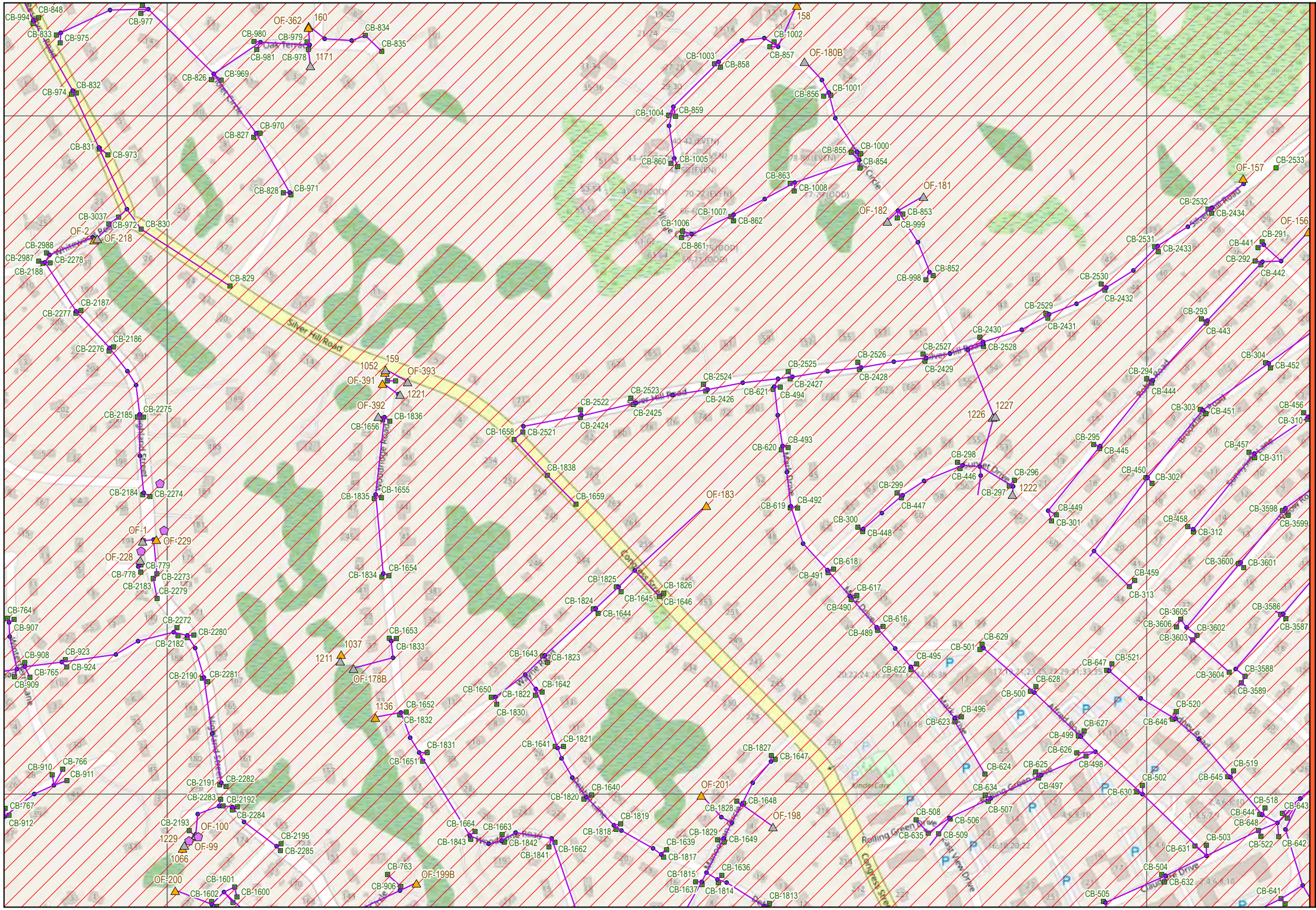
- Drain Pipes
- Swales
- ⬟ Stormwater BMPs
- ▨ MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS


Silver Hill Road
Congress Street
Oak Terrace
Rolling Green Drive
Claudette Drive
Page Number: 15
Stormwater System
Milford, Massachusetts
Upland Outfalls
MS4 Outfalls
Manholes
Catch Basins
Drain Pipes
Swales
Stormwater BMPs
MS4 Urbanized Area
N
0
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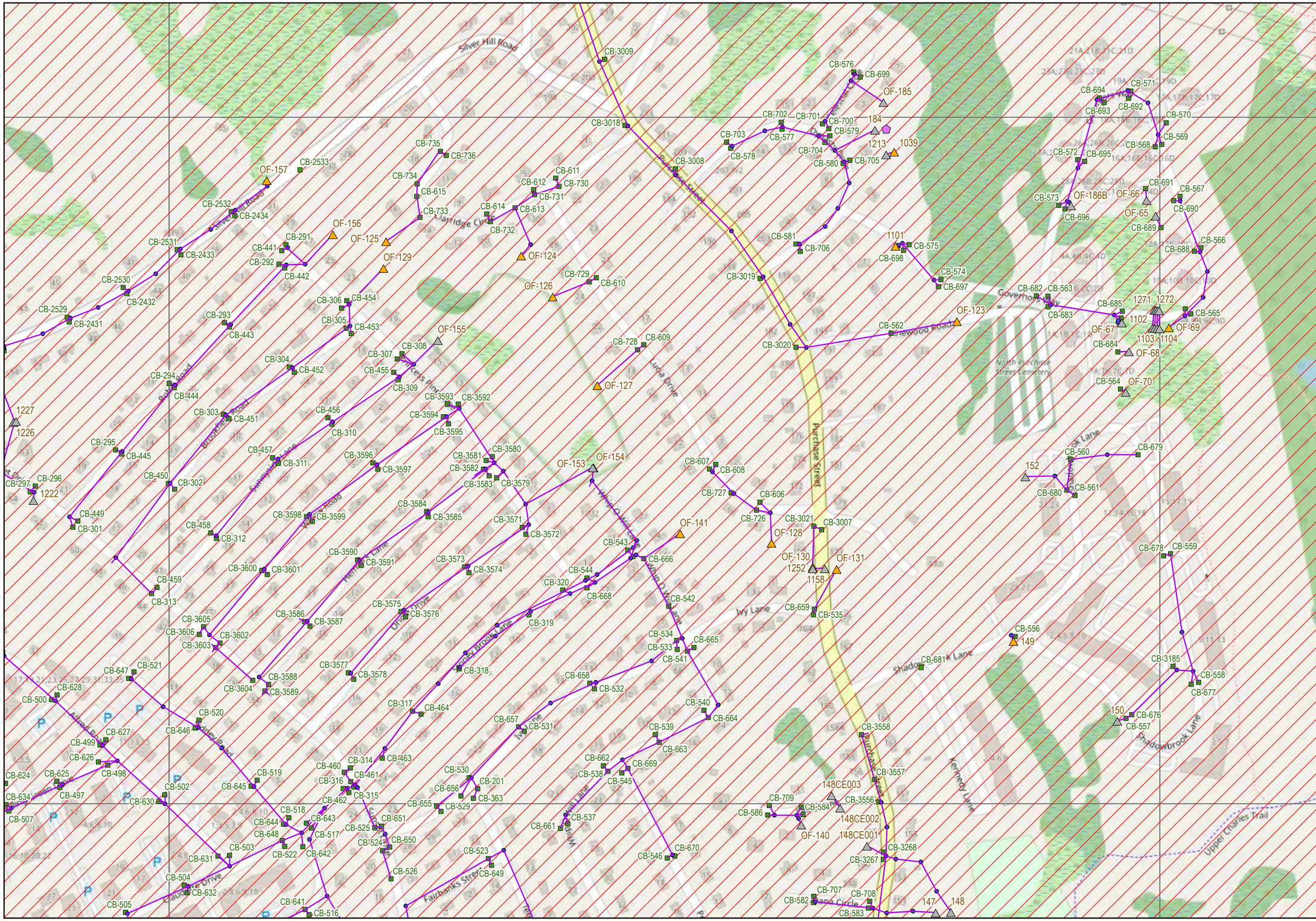
300
Feet
ENVIRONMENTAL PARTNERS


Silver Hill Road
Purchase Street
Governors Way
Kennedy Lane
Shadowbrook Lane
Upper Charles Trail
Fairbanks Street
Hartnett Lane
Ivy Lane
Oak Lane
Shadow Lane
Hurlbut Street
Hillside Drive
Ridge Drive
Hawthorne Drive
Sycamore Drive
Allen Drive
Fairbridge Circle
Luda Drive
Brookside Lane
Sunset Lane
Rutland Road
Hillside Lane
Hawthorne Lane
Ridge Drive
Hurlbut Street
Kennedy Lane
Shadowbrook Lane
Upper Charles Trail
North Purchase Street Cemetery
Page Number: 16
Stormwater System
Milford, Massachusetts
Upland Outfalls
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Manholes
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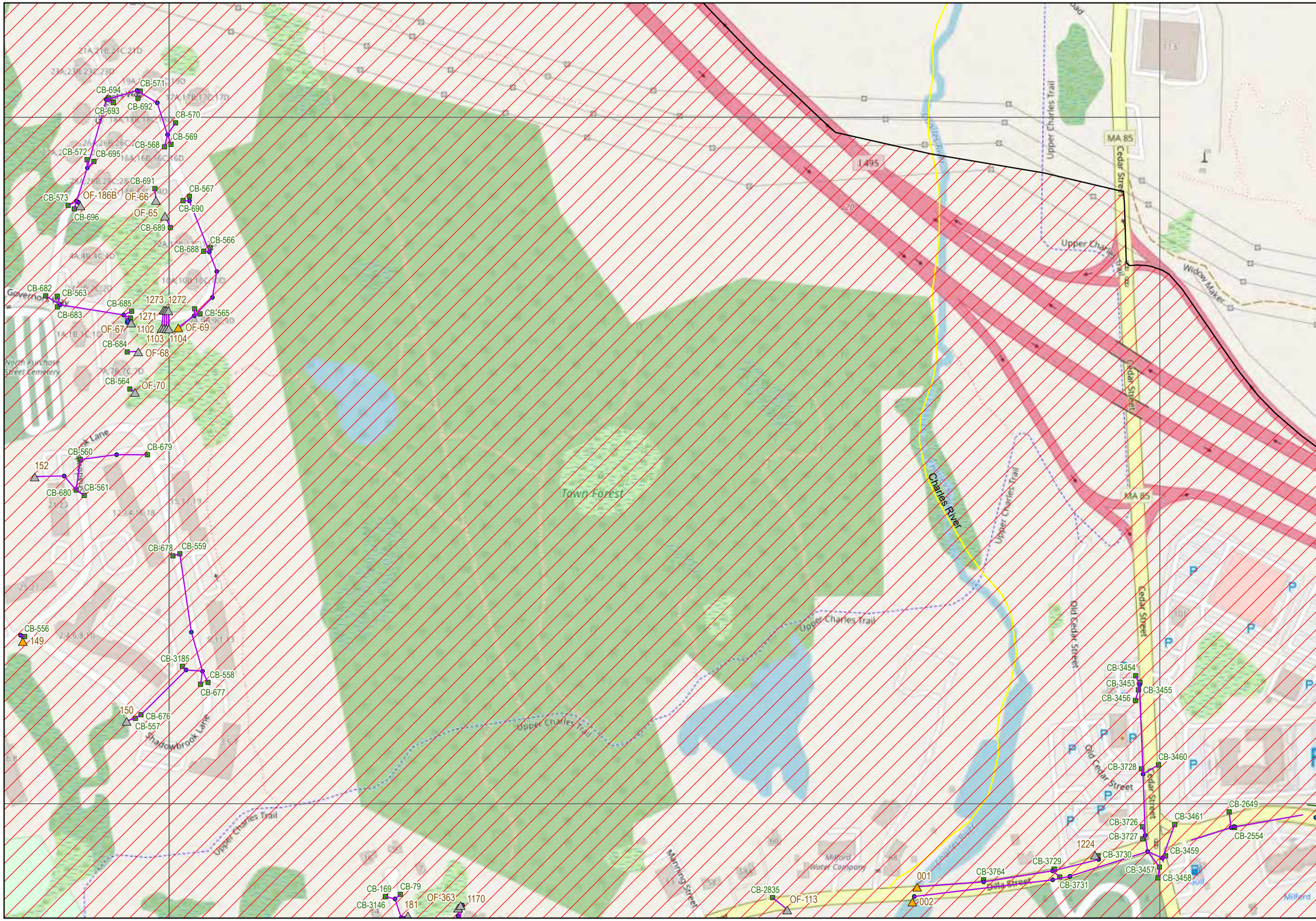
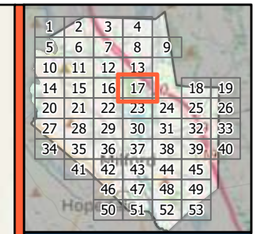
Drain Pipes
Swales
Stormwater BMPs
MS4 Urbanized Area
N
0
150
300
Feet
ENVIRONMENTAL PARTNERS





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Stormwater System

Milford, Massachusetts

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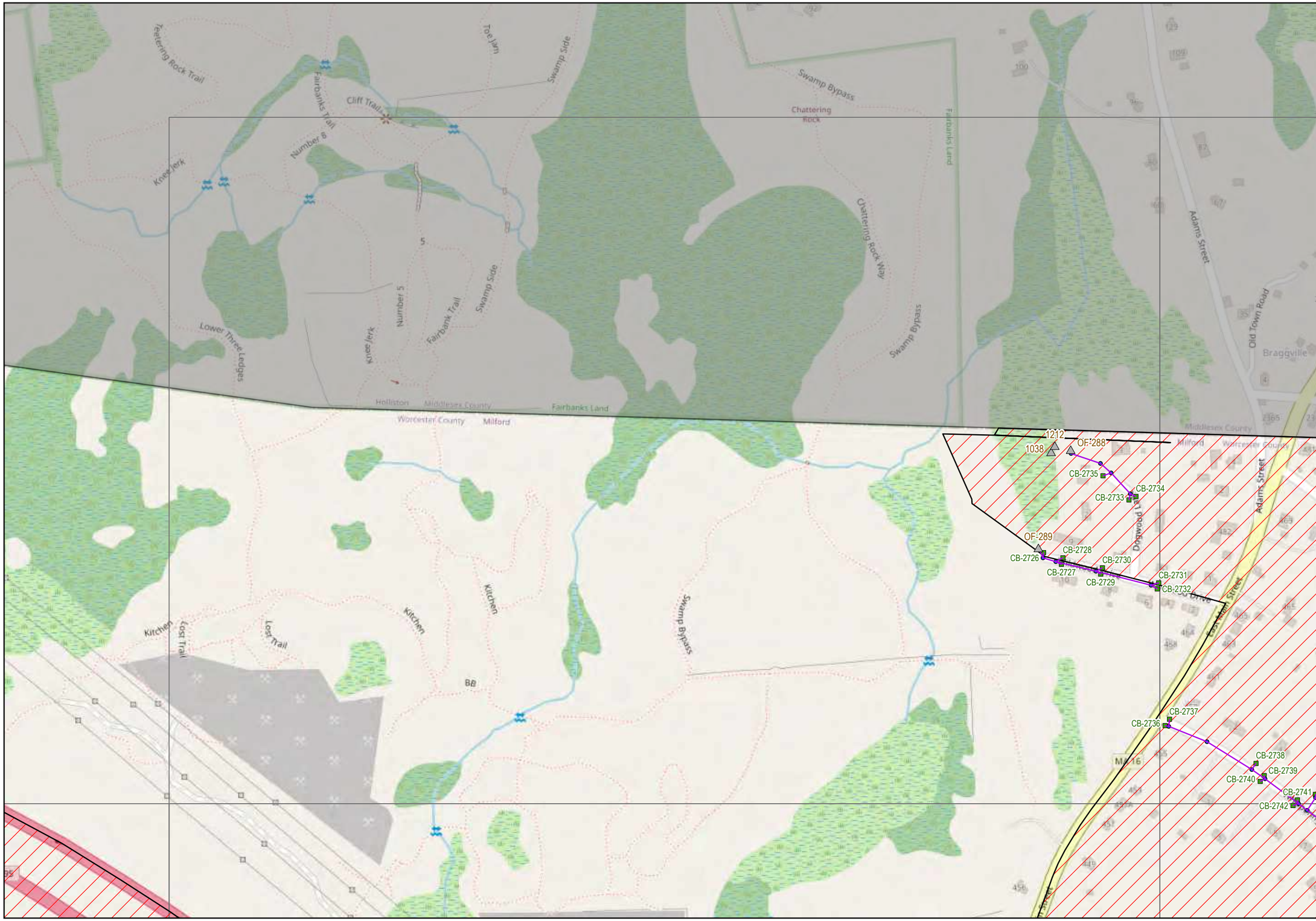
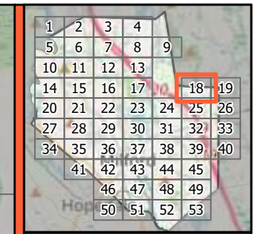
N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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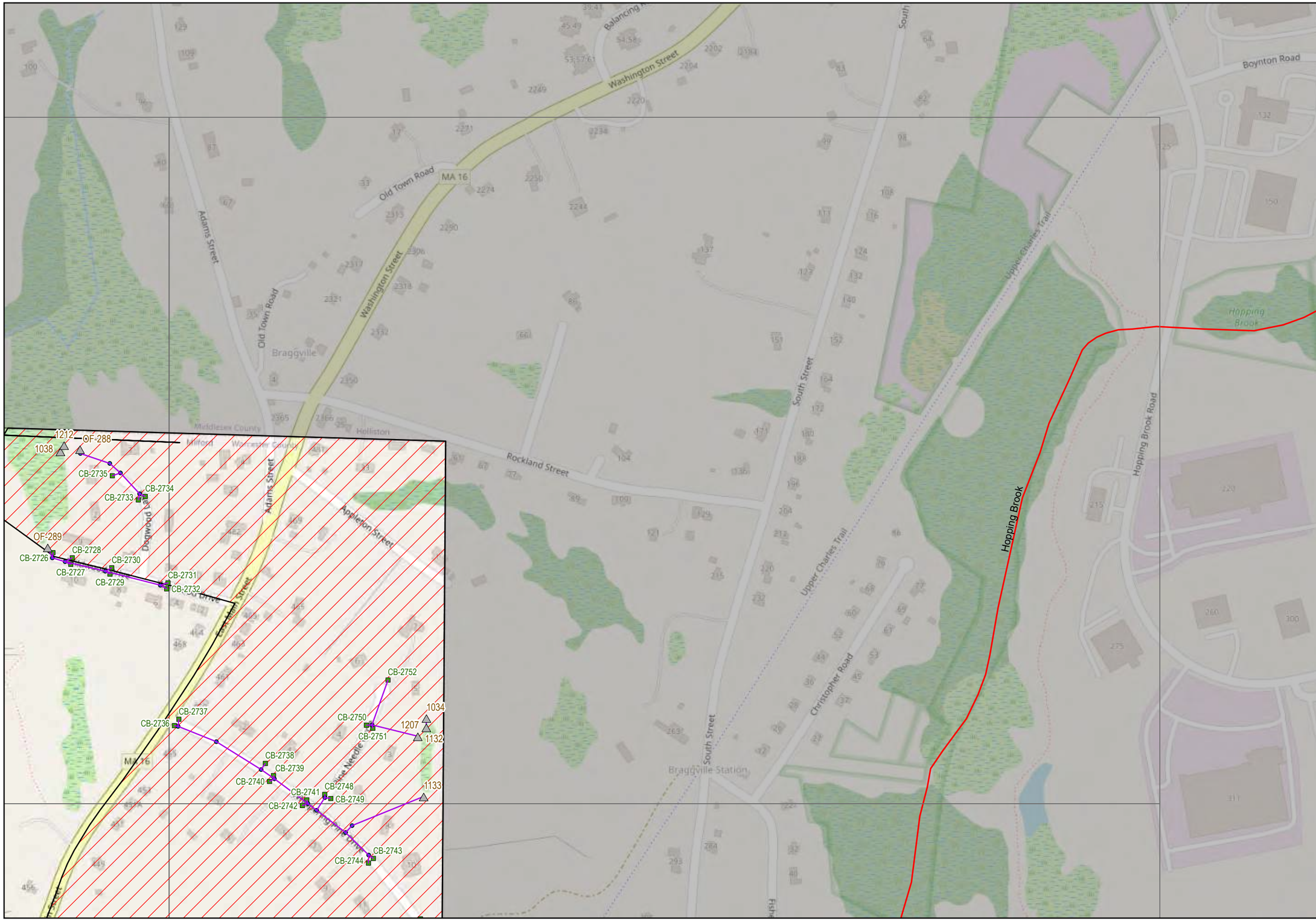
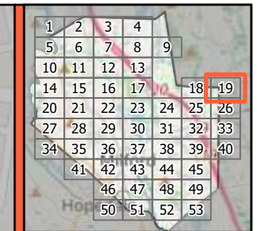
Stormwater System

Milford, Massachusetts

ENVIRONMENTAL PARTNERS





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Stormwater System

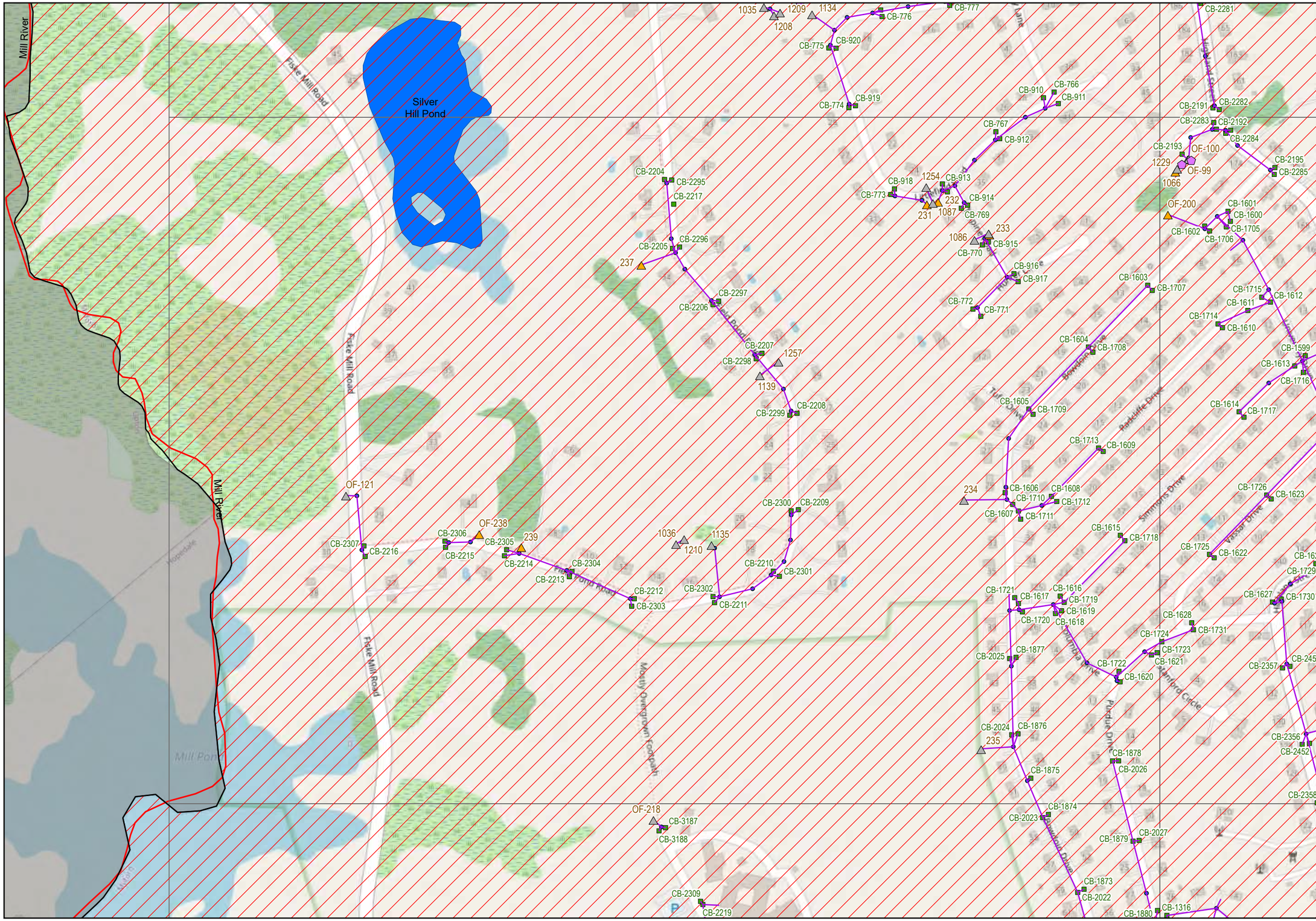
Milford, Massachusetts

- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS


Silver Hill Pond
Mill River
Fisk Mill Road
Mill Pond
Mostly Overgrown Footpath
Hunt Circle
Bowditch Drive
Radcliffe Drive
Simmons Drive
Vassar Drive
Purdue Drive
Stanford Circle
Hopedale
1035
1209
1208
1134
CB-776
CB-777
CB-775
CB-920
CB-774
CB-919
CB-910
CB-766
CB-911
CB-767
CB-912
CB-2281
CB-2282
CB-2191
CB-2283
CB-2192
CB-2284
CB-2193
OF-100
1229
OF-99
1066
CB-2195
CB-2285
CB-2204
CB-2295
CB-2217
CB-918
CB-773
1254
CB-913
232
1087
231
CB-914
CB-769
233
1086
CB-915
CB-770
CB-916
CB-917
CB-772
CB-771
OF-200
CB-1601
CB-1600
CB-1602
CB-1705
CB-1706
CB-2205
CB-2296
237
CB-2297
CB-2206
CB-1603
CB-1707
CB-1715
CB-1612
CB-1611
CB-1714
CB-1610
CB-1604
CB-1708
CB-1599
CB-1613
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CB-2298
1257
1139
CB-2299
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CB-1605
CB-1709
CB-1614
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OF-121
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CB-1606
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OF-238
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1210
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CB-2023
OF-218
CB-3187
CB-3188
CB-1879
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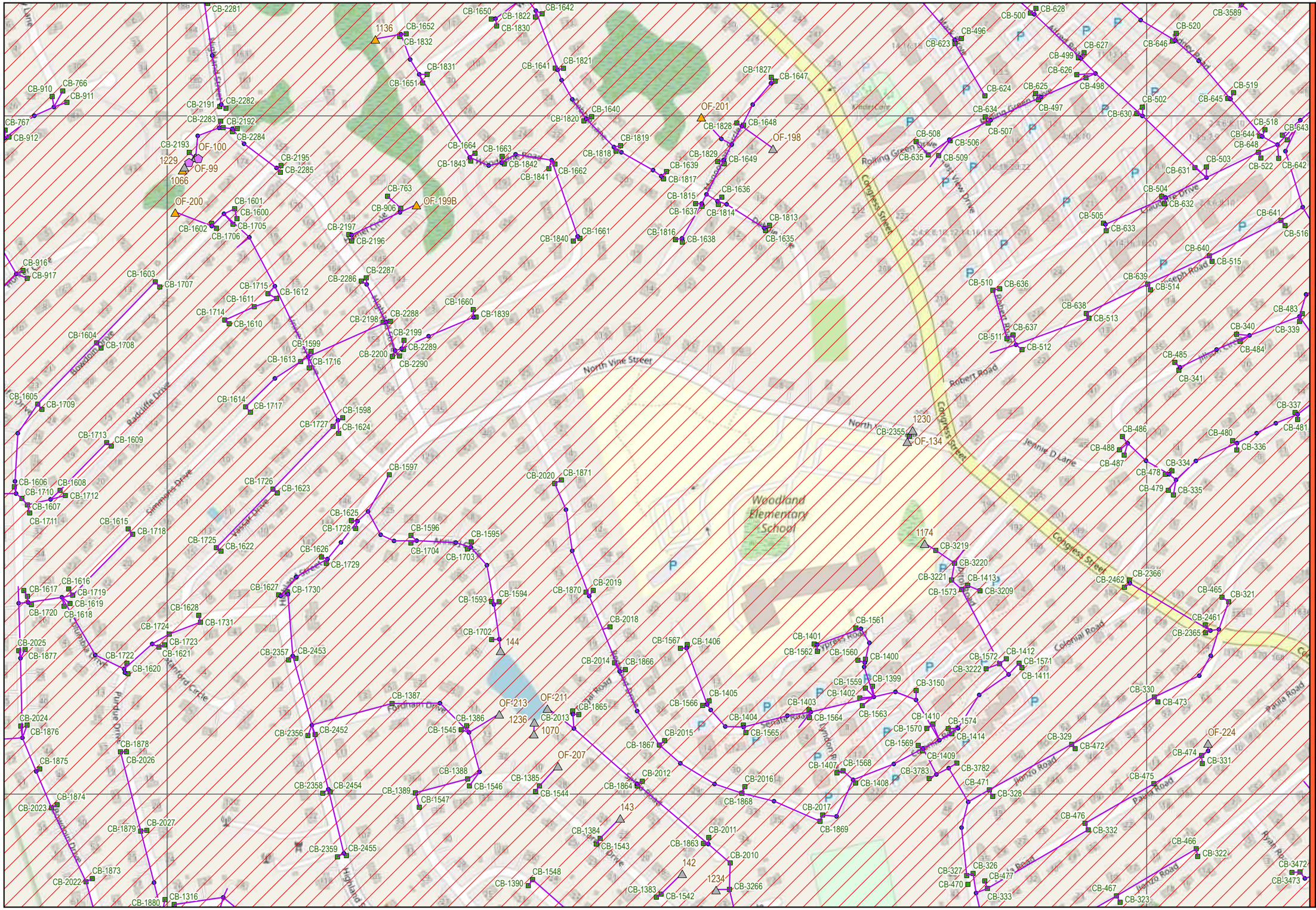
CB-1880
CB-1316
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53
Page Number: 20
Stormwater System
Milford, Massachusetts
Upland Outfalls
MS4 Outfalls
Manholes
Catch Basins
Drain Pipes
Swales
Stormwater BMPs
MS4 Urbanized Area
N
0 150 300 Feet
ENVIRONMENTAL PARTNERS



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Stormwater System

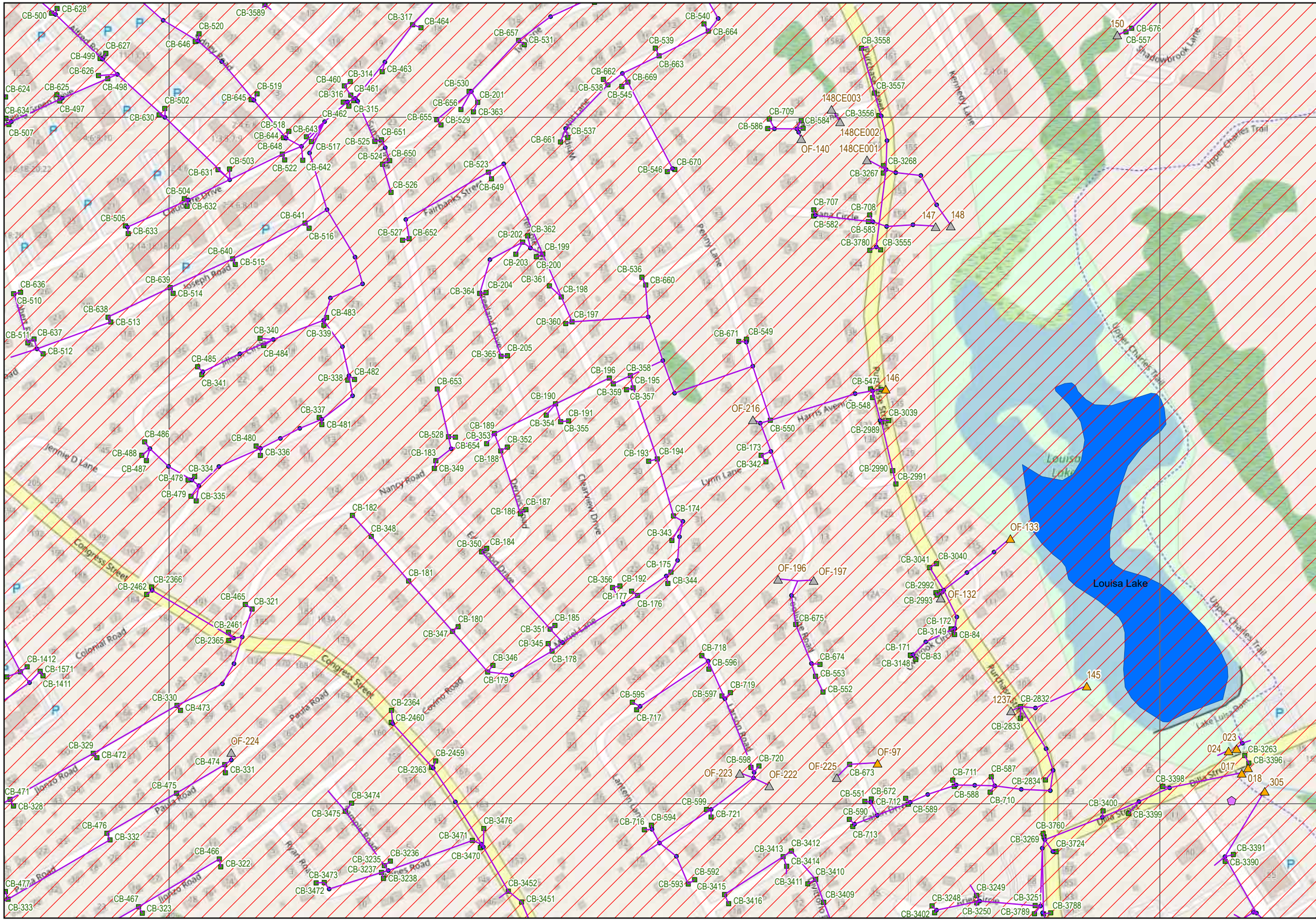
Milford, Massachusetts

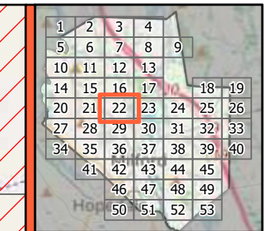
- ▲ Upland Outfalls
- ▲ MS4 Outfalls
- ● Manholes
- 🟩 Catch Basins
- Drain Pipes
- Swales
- ⬟ Stormwater BMPs
- ▨ MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

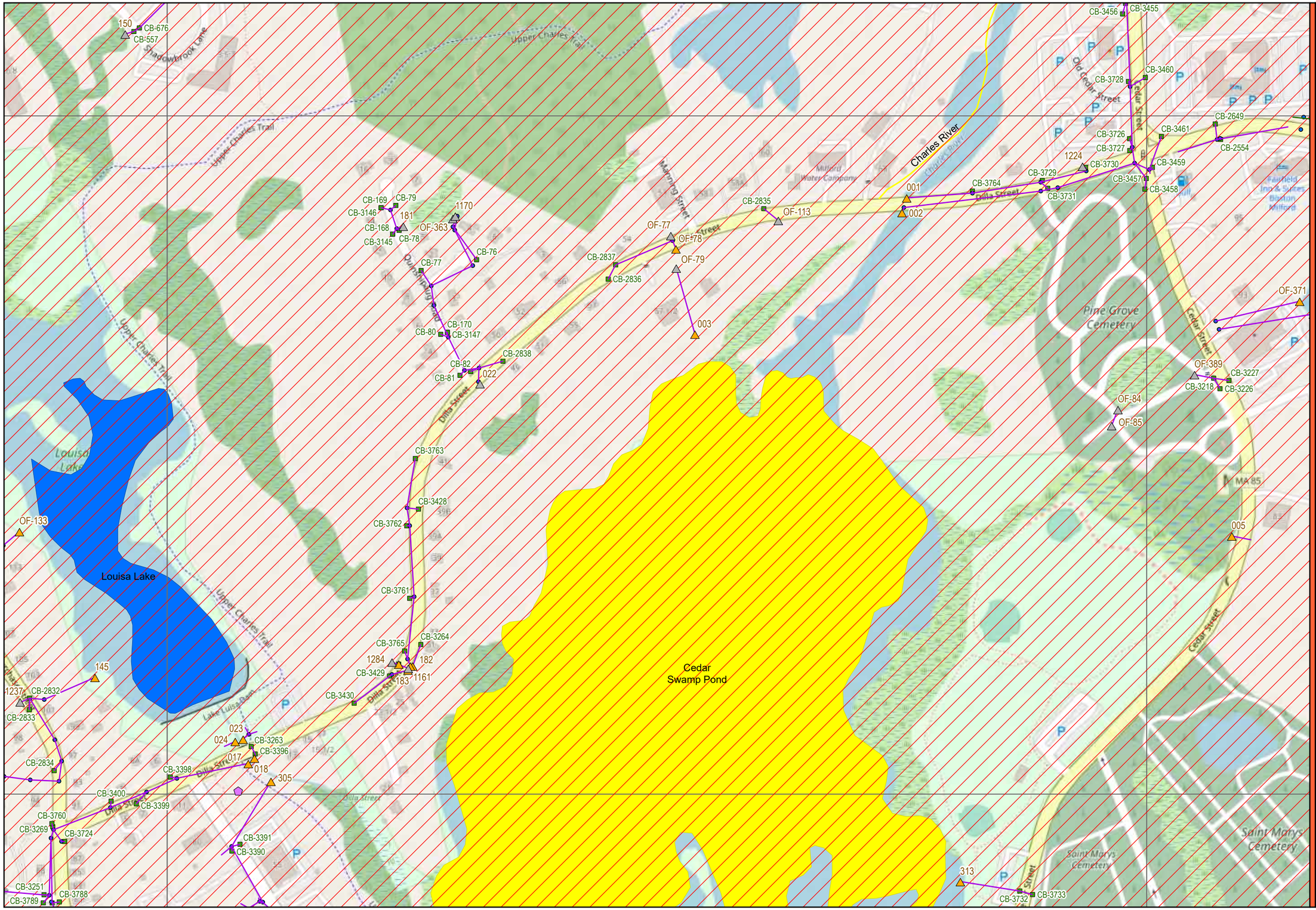
Milford, Massachusetts

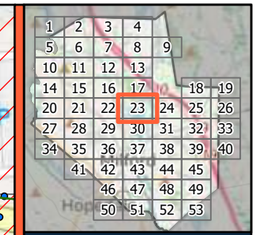
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

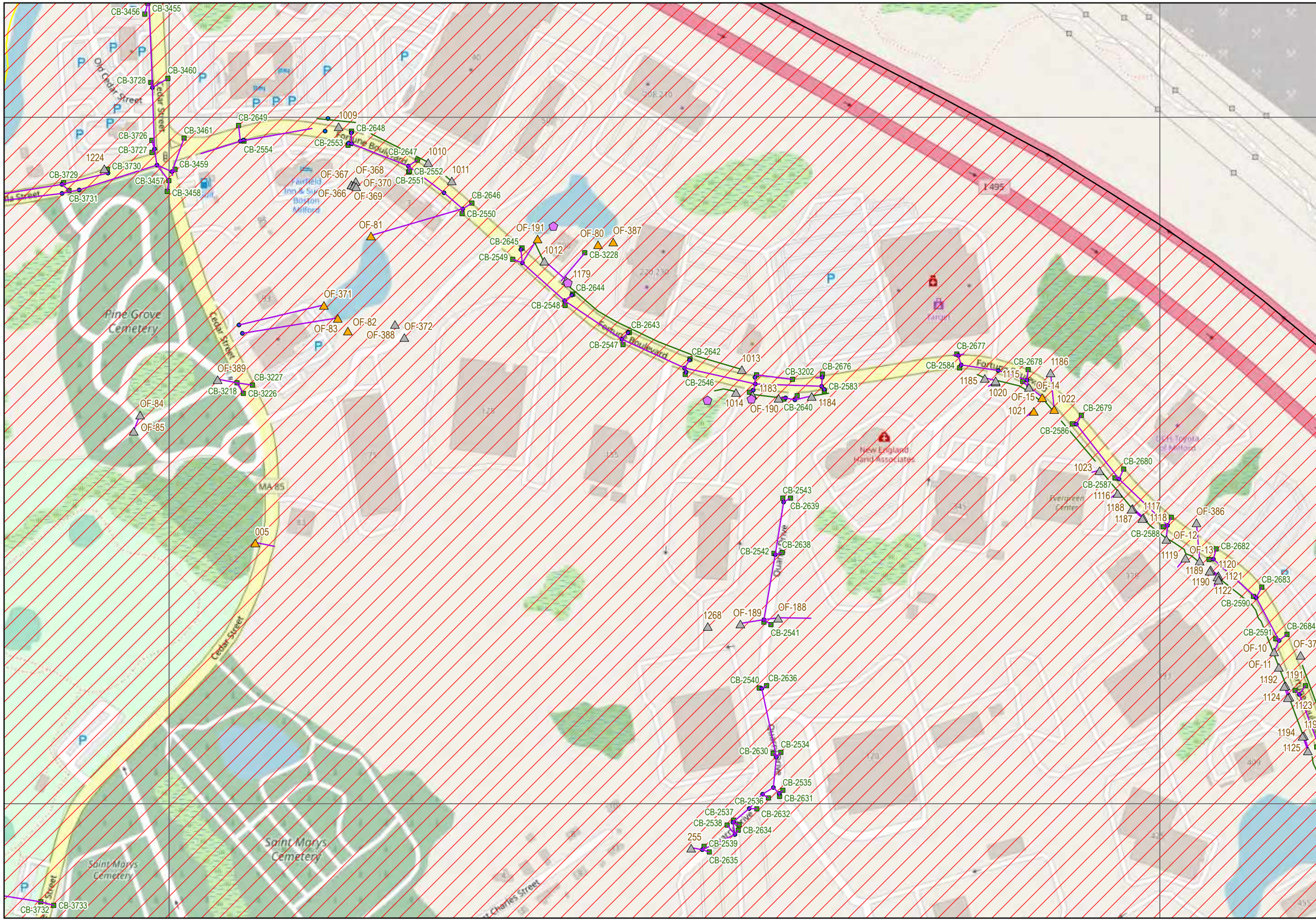
Milford, Massachusetts

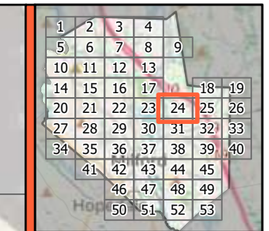
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

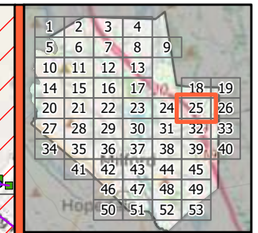
Milford, Massachusetts

- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS



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Stormwater System

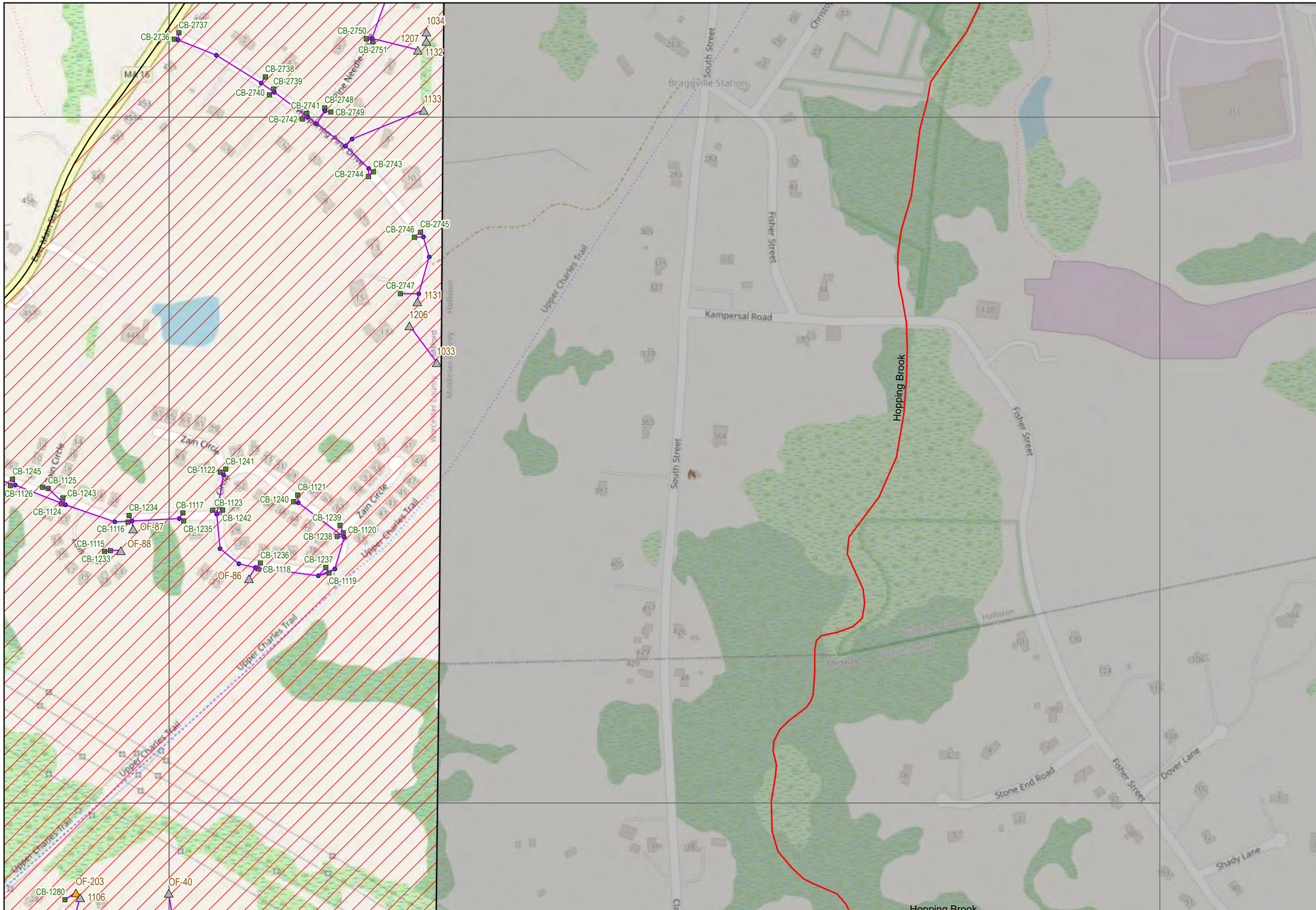
Milford, Massachusetts

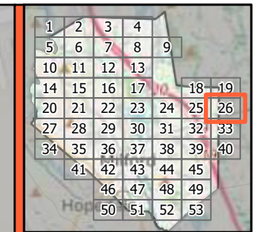
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

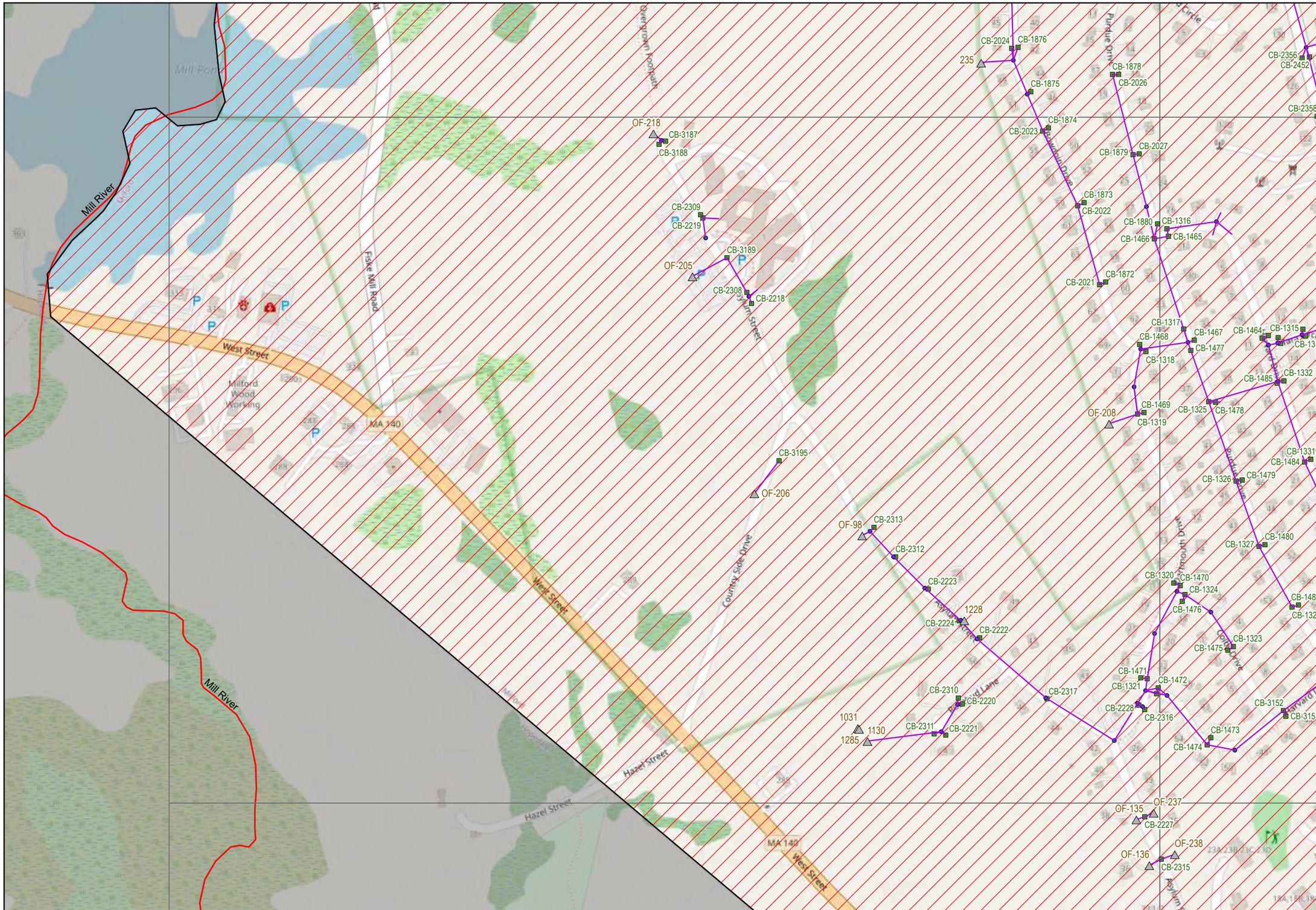
Milford, Massachusetts

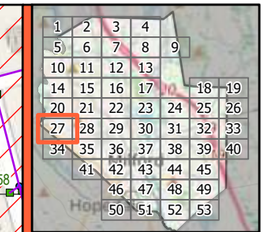
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

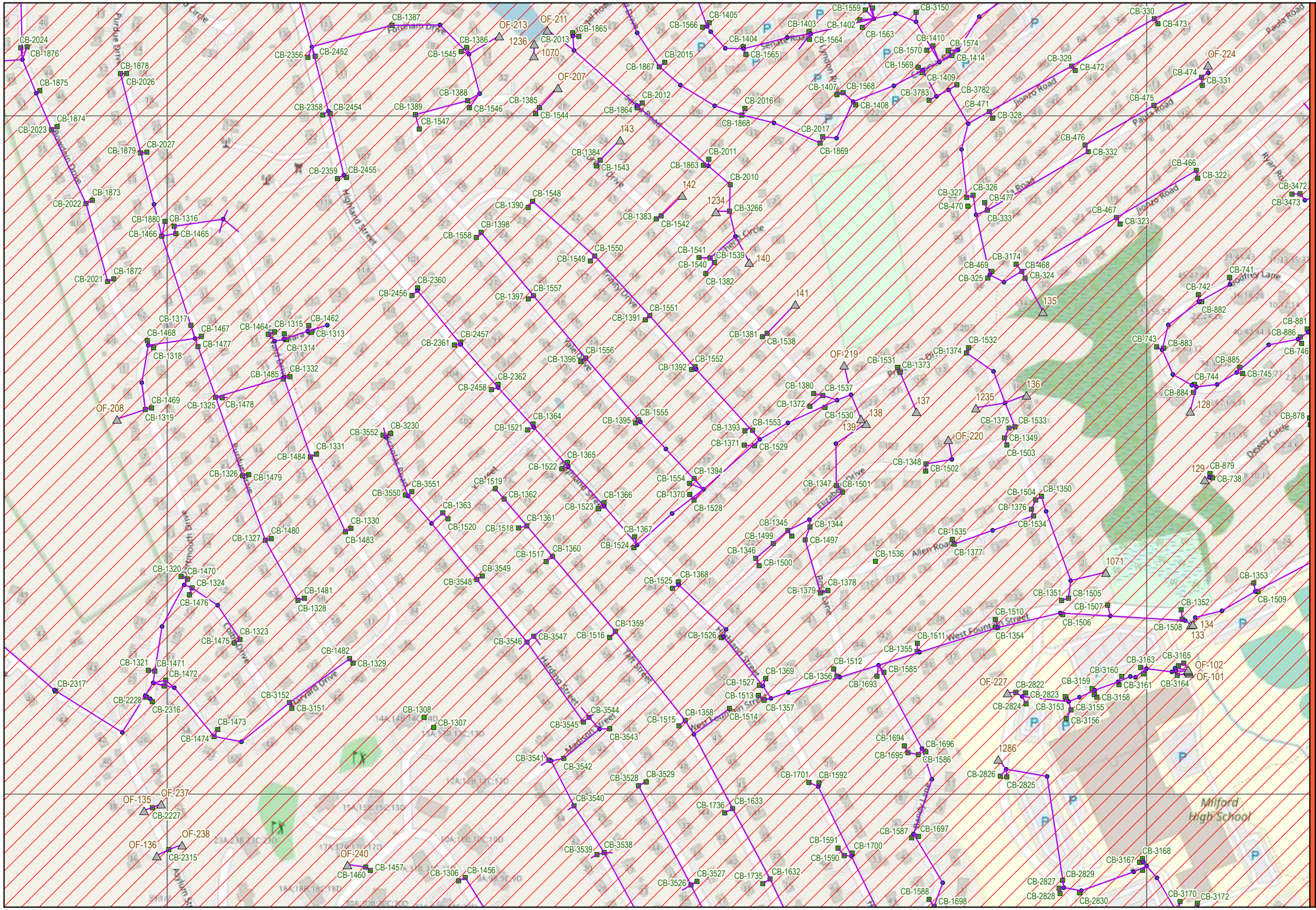
Milford, Massachusetts

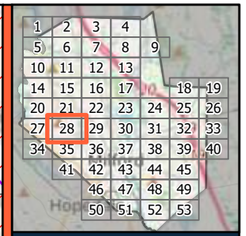
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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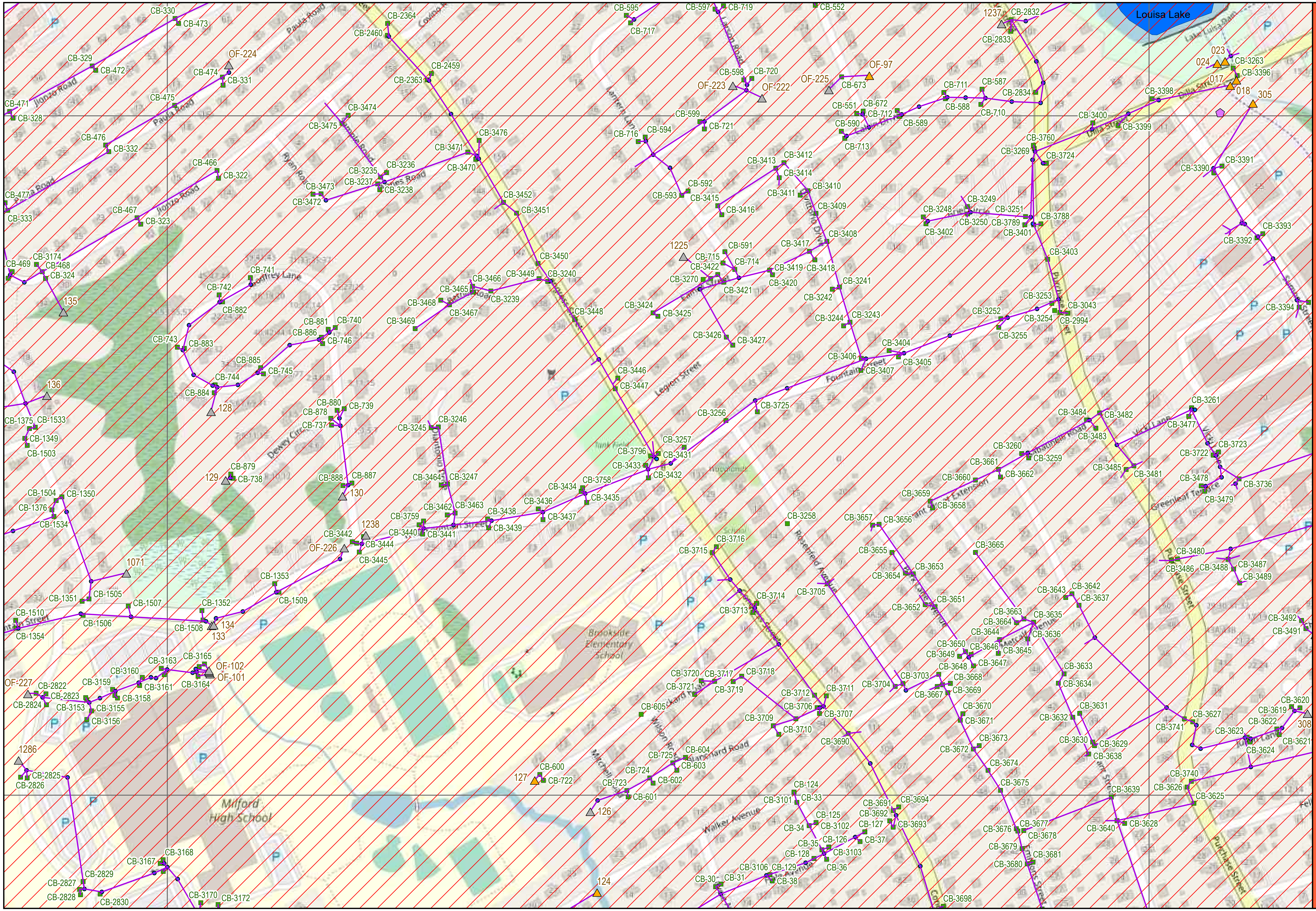
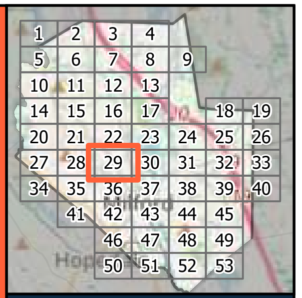
Stormwater System

Milford, Massachusetts

ENVIRONMENTAL PARTNERS





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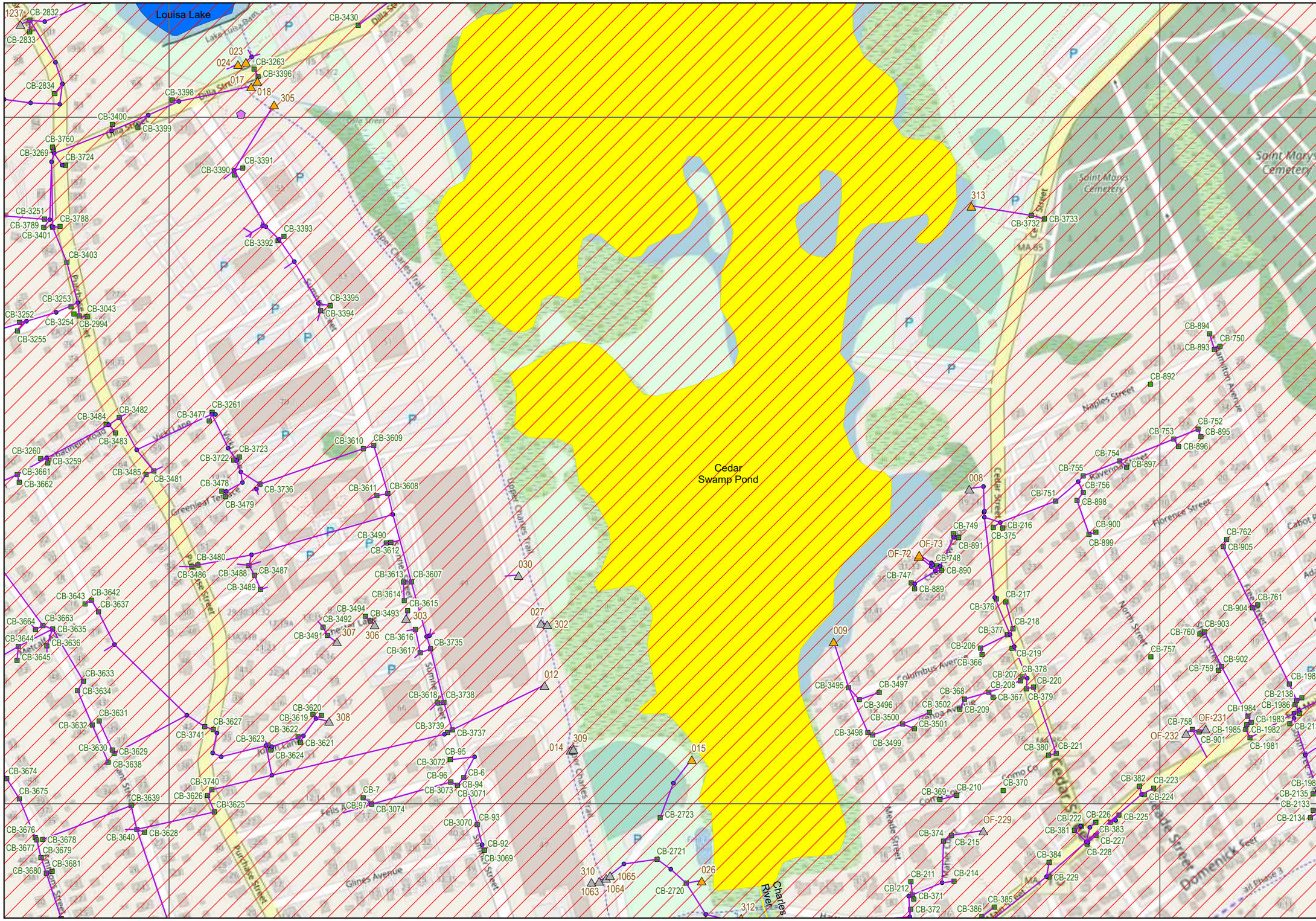
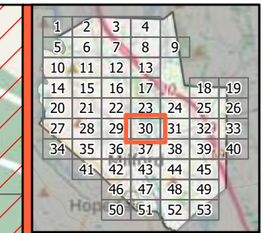
Stormwater System

Milford, Massachusetts

▲	Upland Outfalls
▲	MS4 Outfalls
●	Manholes
🟩	Catch Basins
—	Drain Pipes
—	Swales
⬟	Stormwater BMPs
▨	MS4 Urbanized Area

ENVIRONMENTAL PARTNERS





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Stormwater System

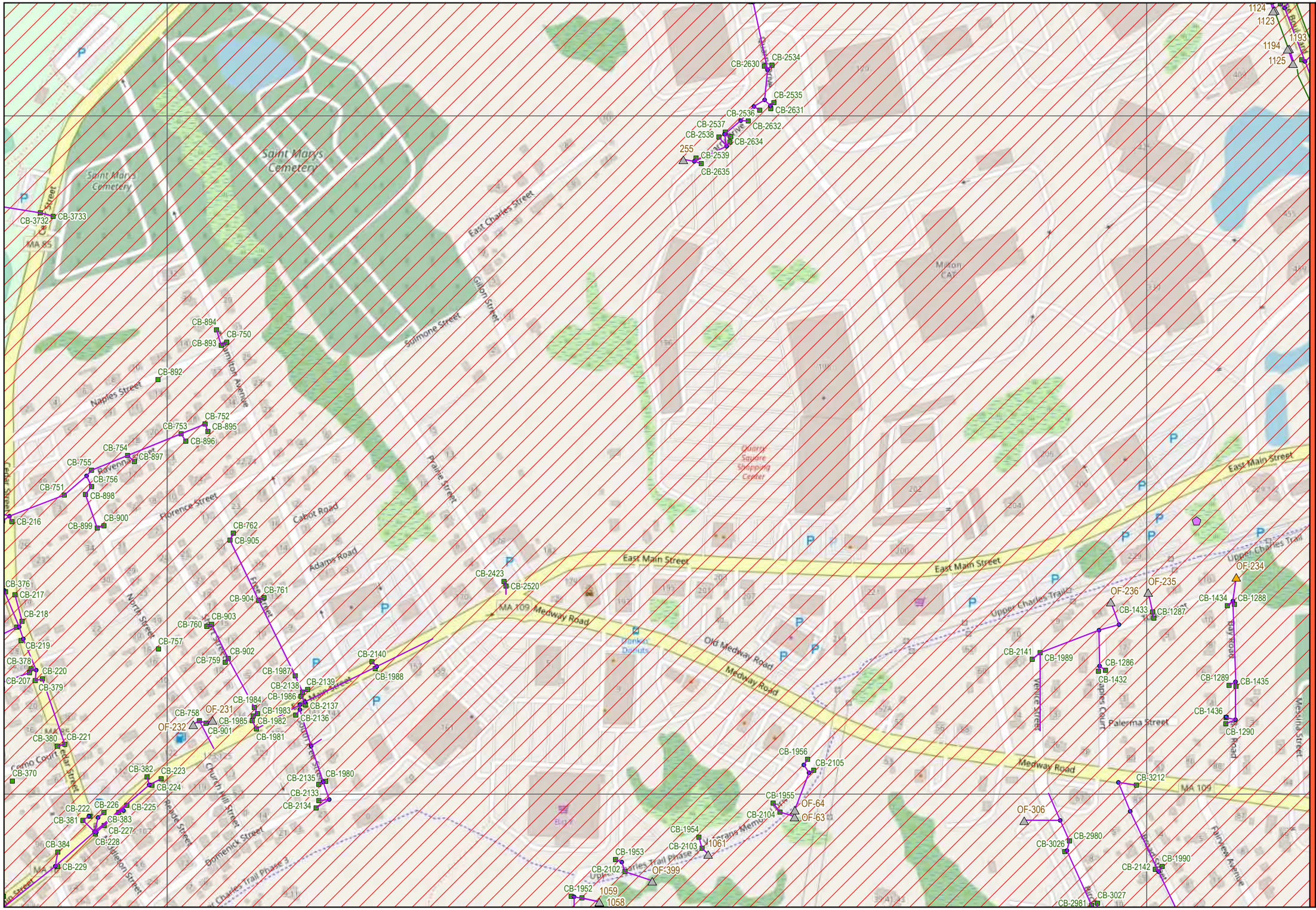
Milford, Massachusetts

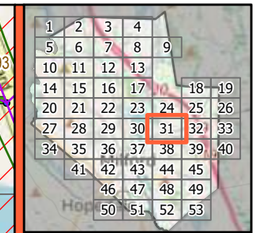
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

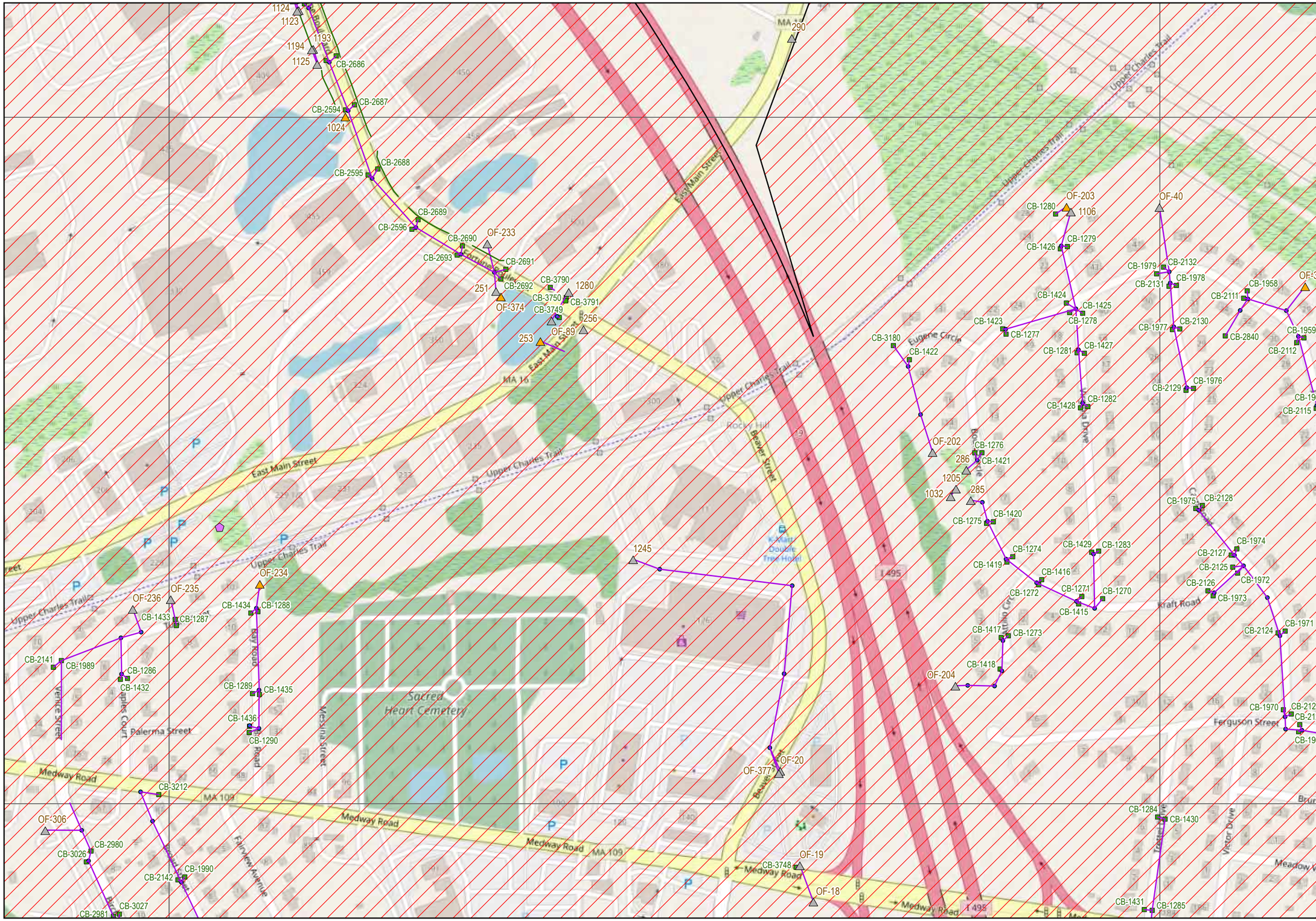
Milford, Massachusetts

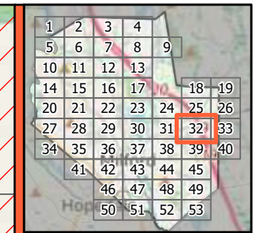
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

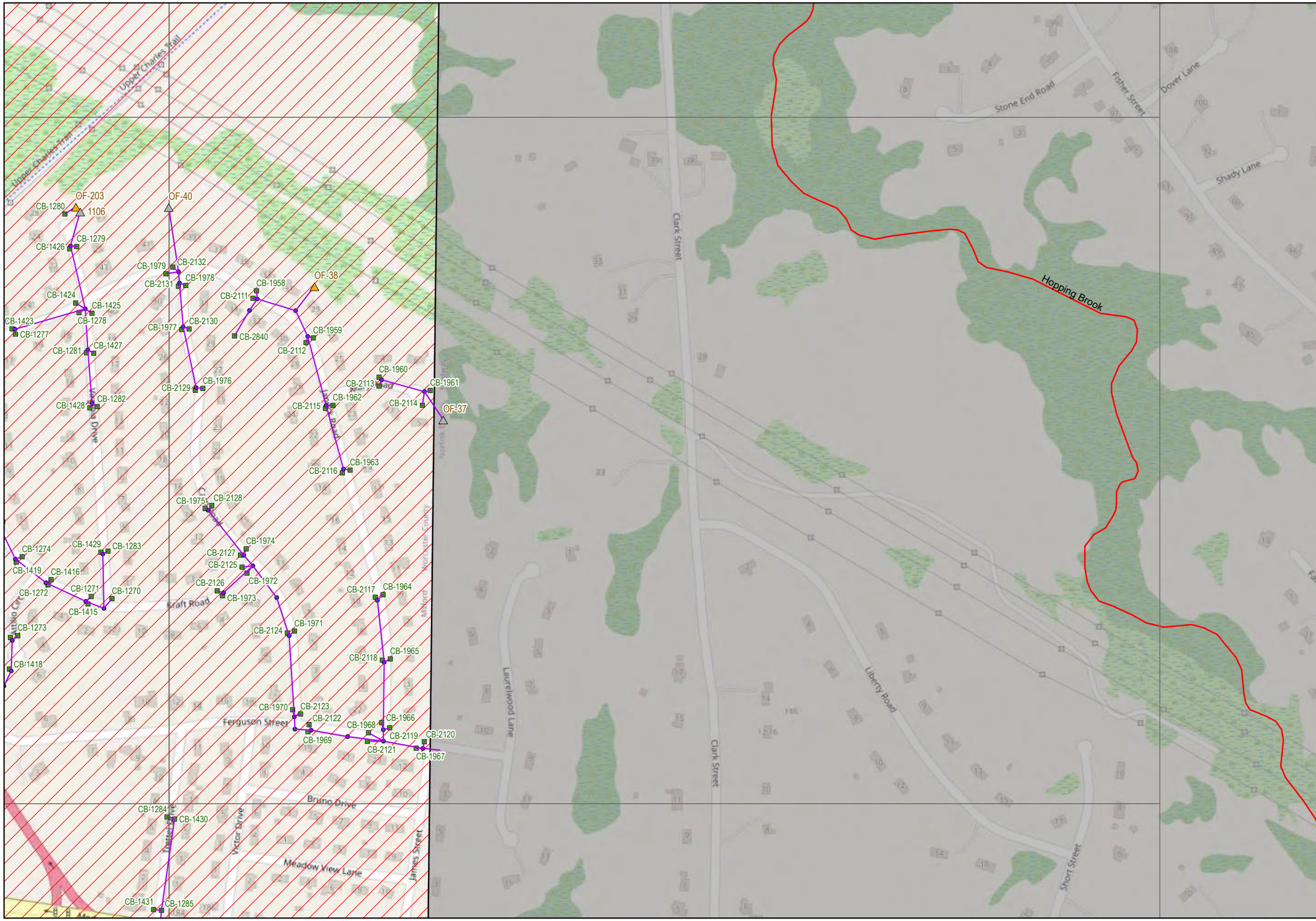
Milford, Massachusetts

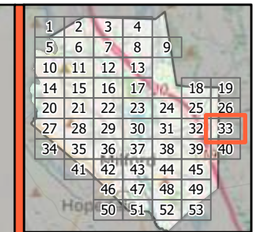
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

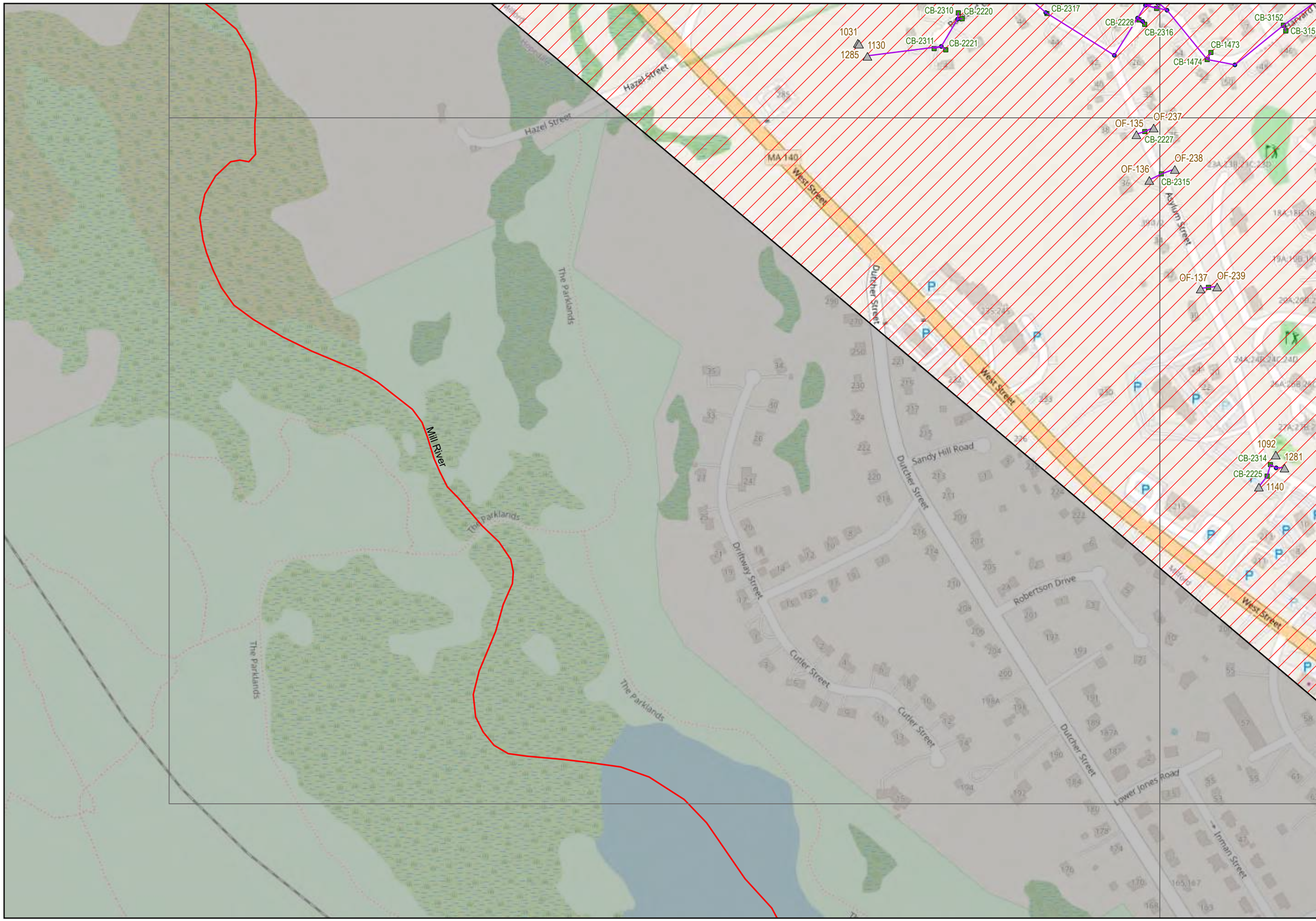
Milford, Massachusetts

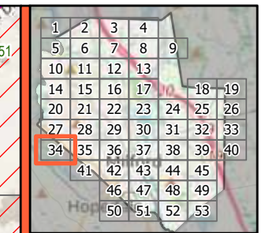
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

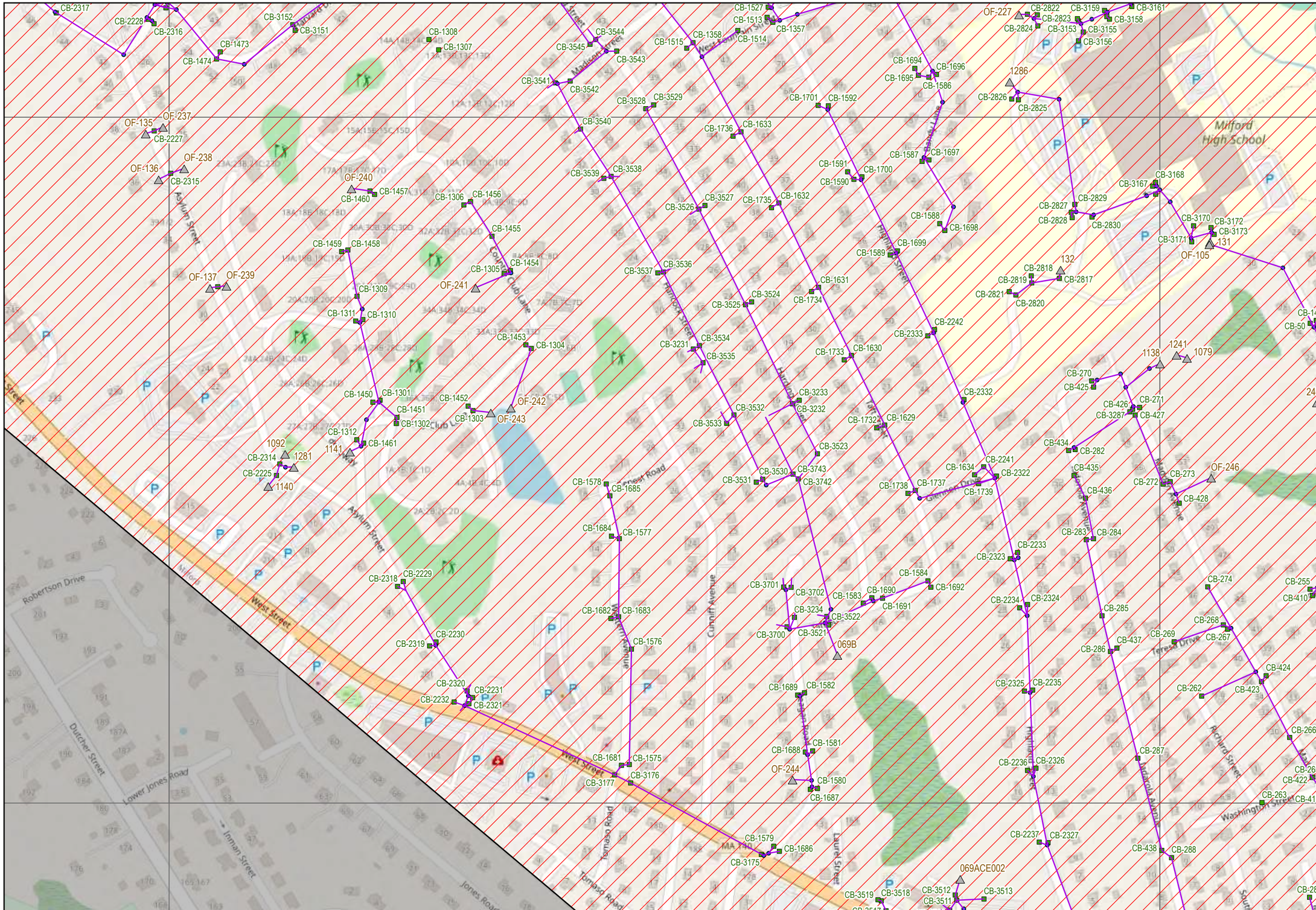
Milford, Massachusetts

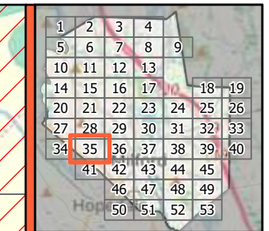
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

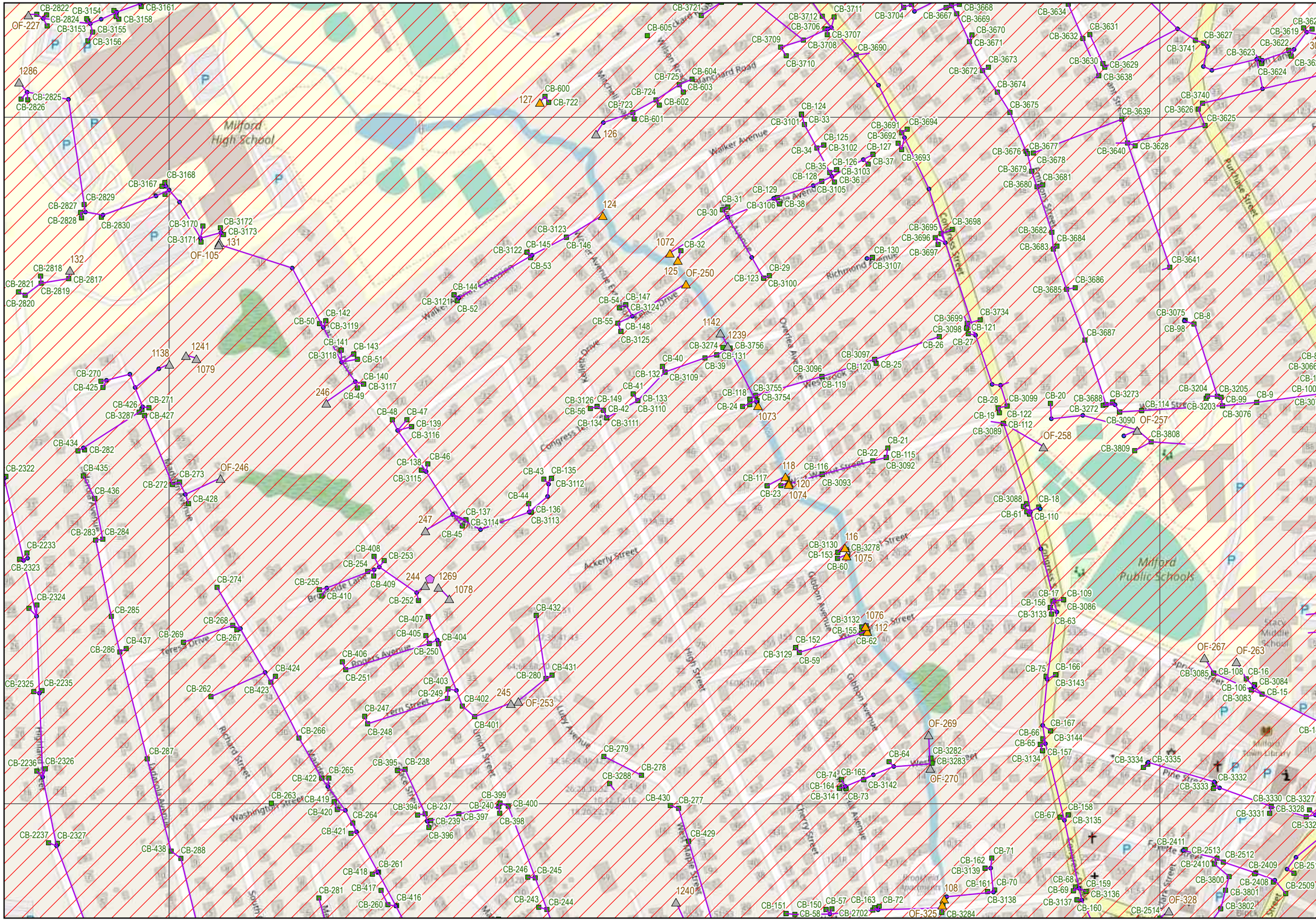
Milford, Massachusetts

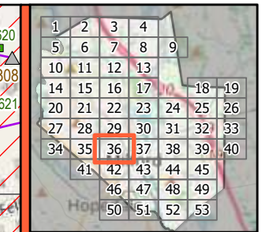
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

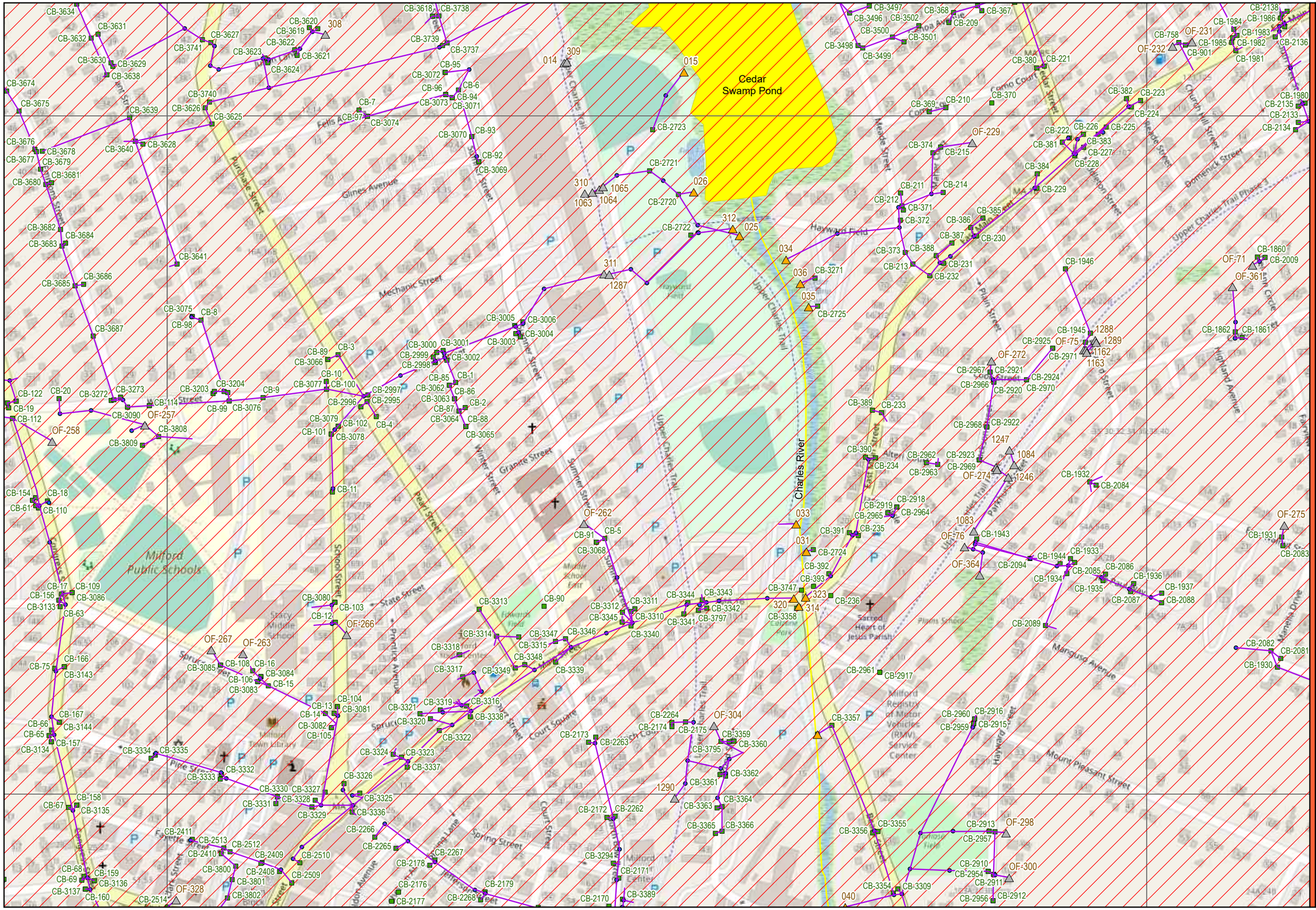
Milford, Massachusetts

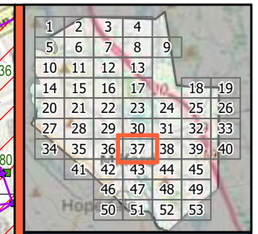
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

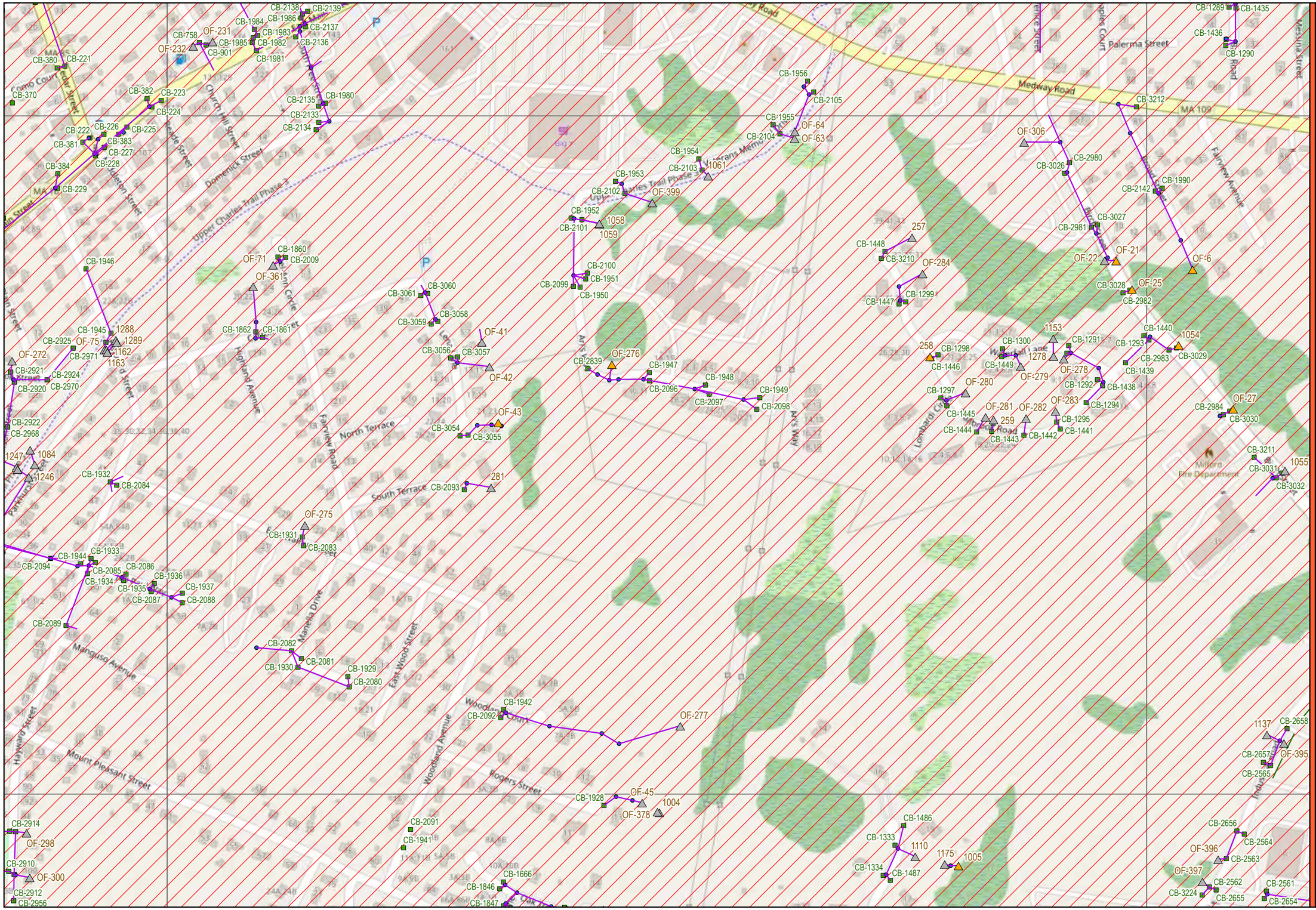
Milford, Massachusetts

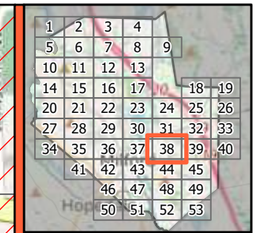
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

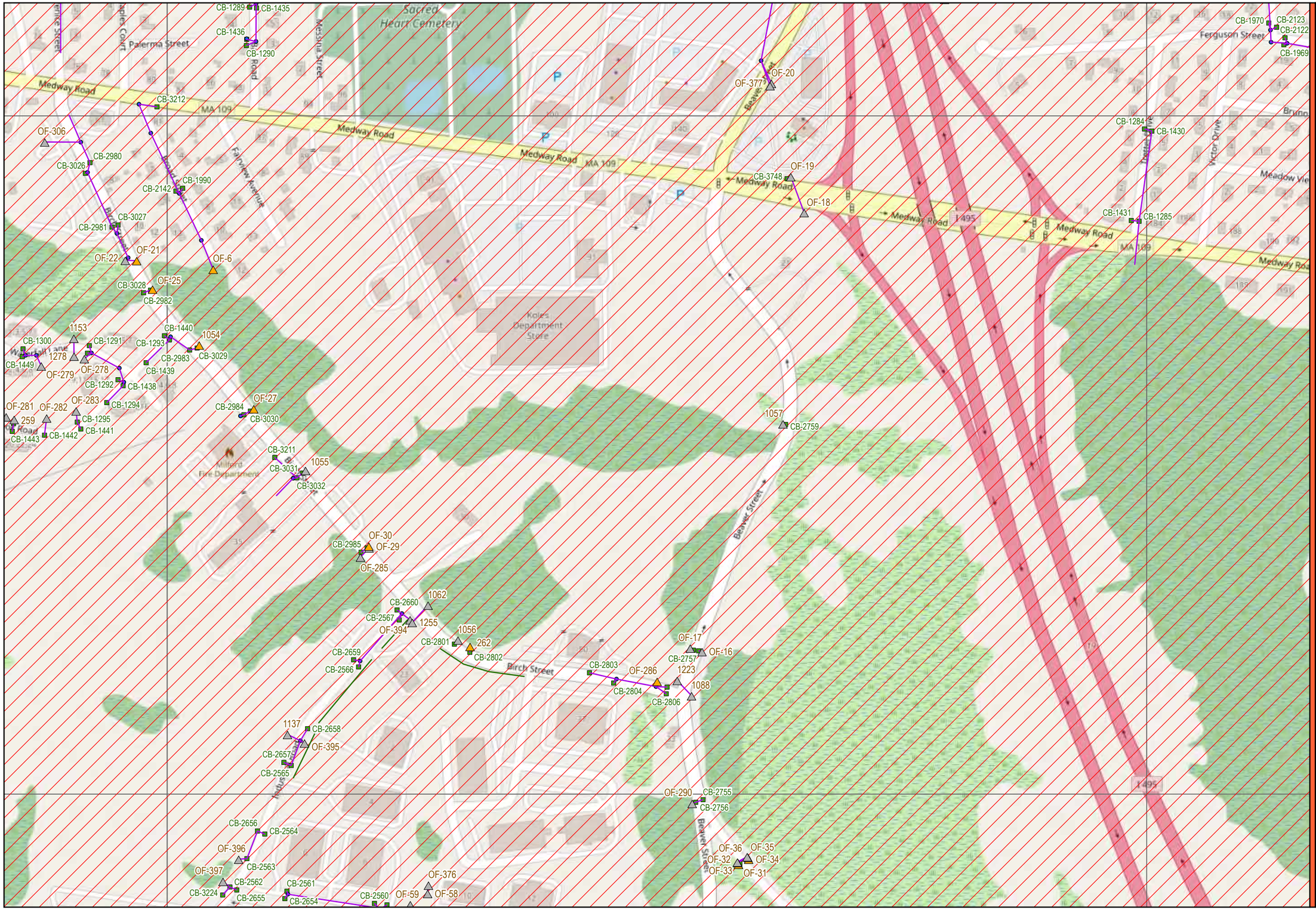
Milford, Massachusetts

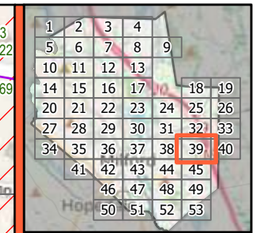
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

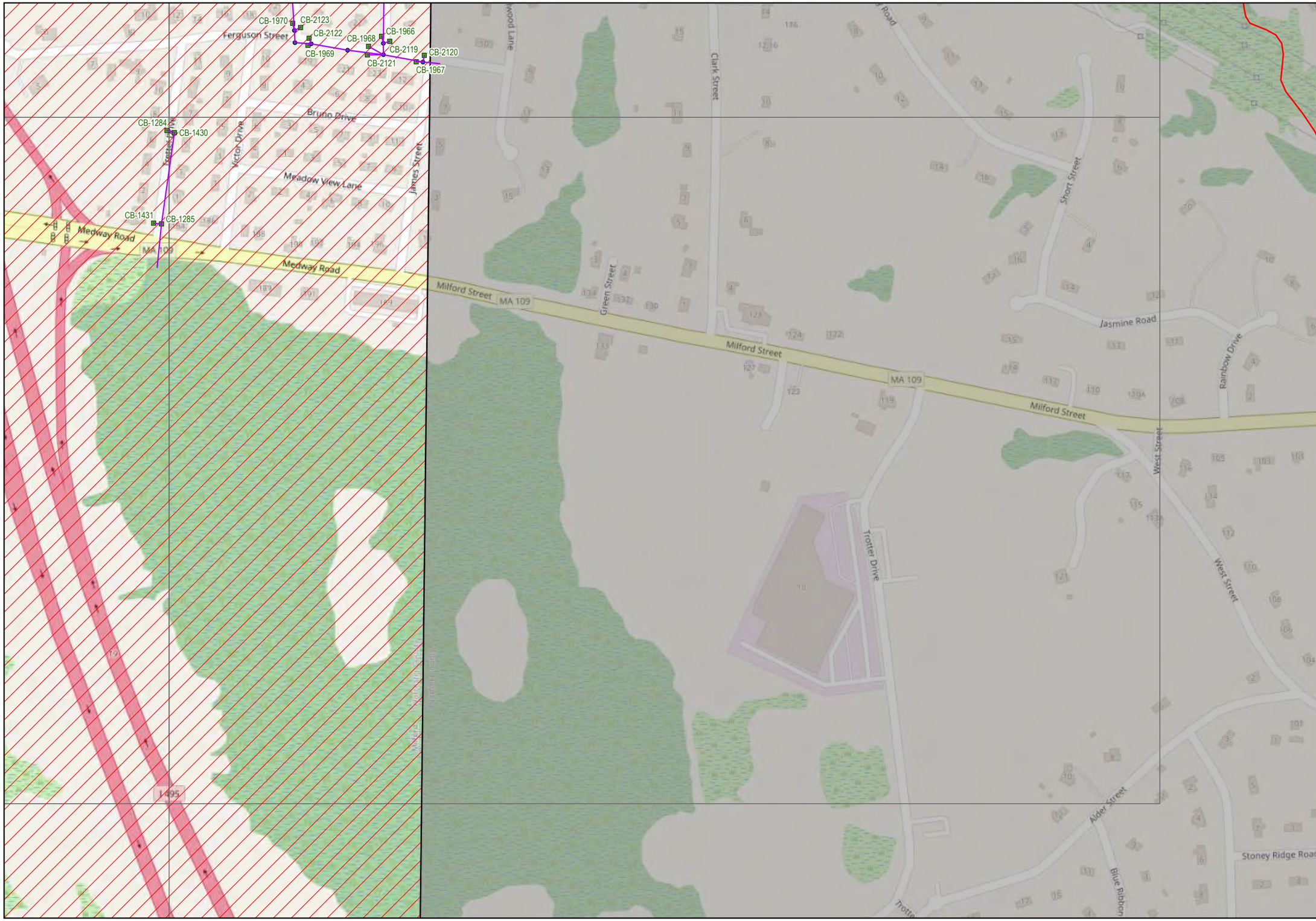
Milford, Massachusetts

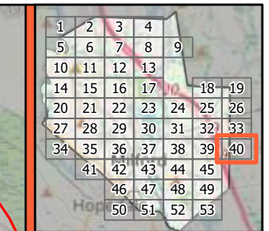
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

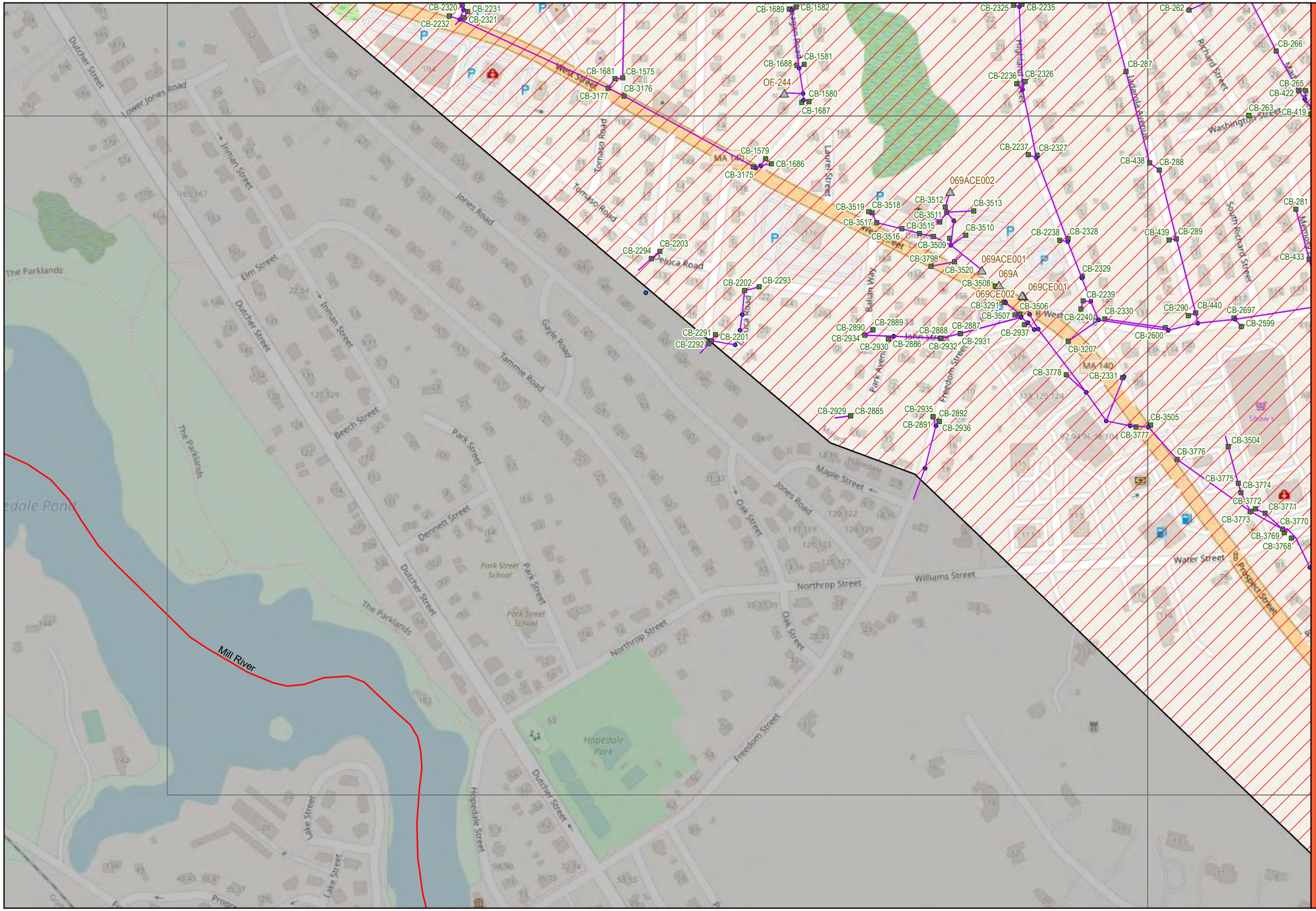
Milford, Massachusetts

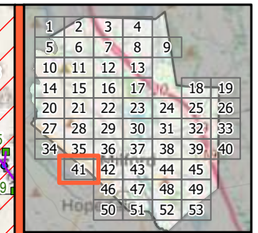
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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Stormwater System

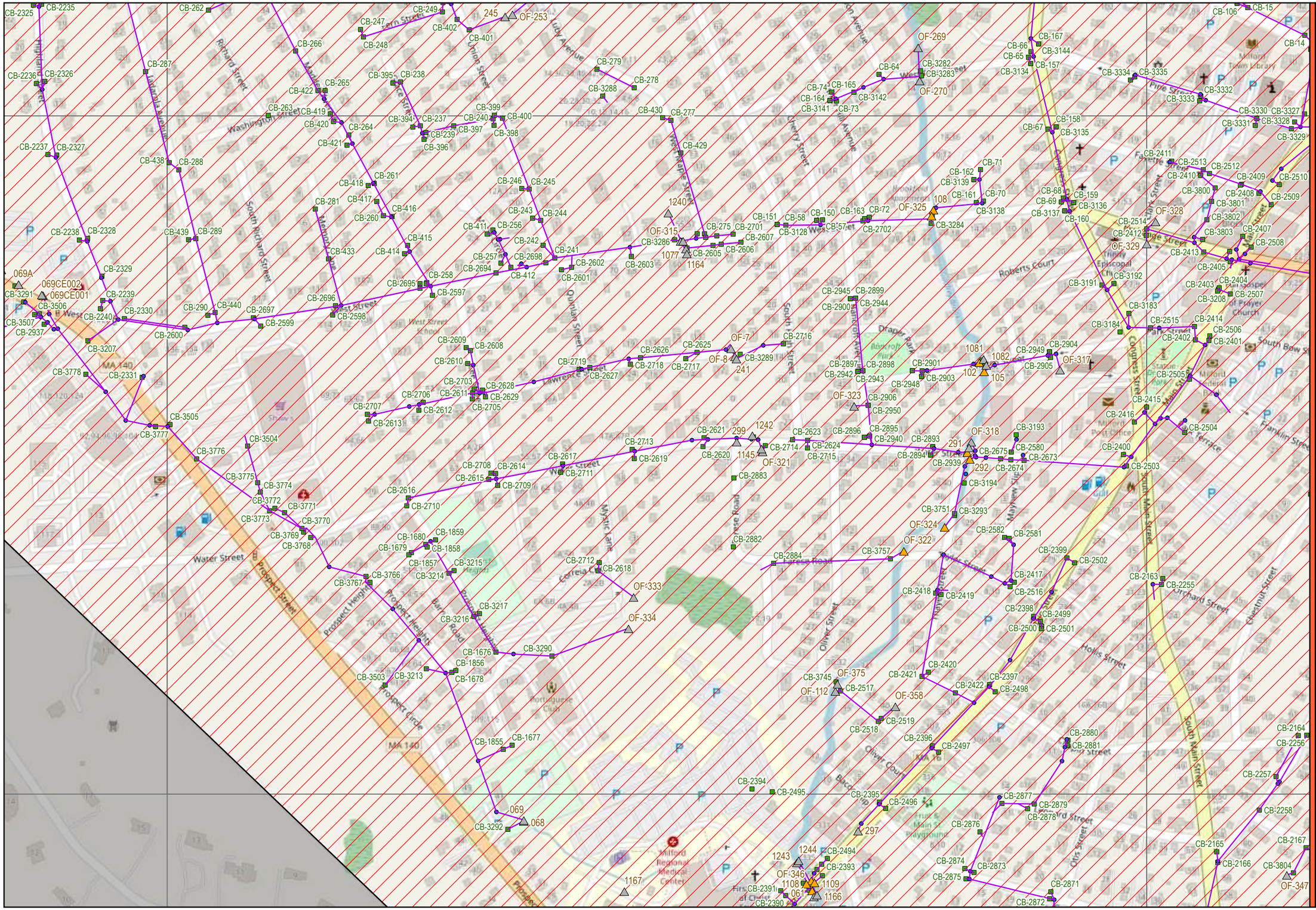
Milford, Massachusetts

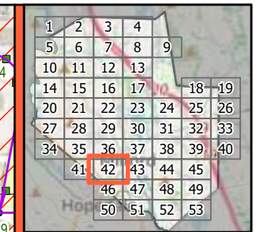
- Upland Outfalls
- MS4 Outfalls
- Manholes
- Catch Basins
- Drain Pipes
- Swales
- Stormwater BMPs
- MS4 Urbanized Area

N

0 150 300 Feet

ENVIRONMENTAL PARTNERS





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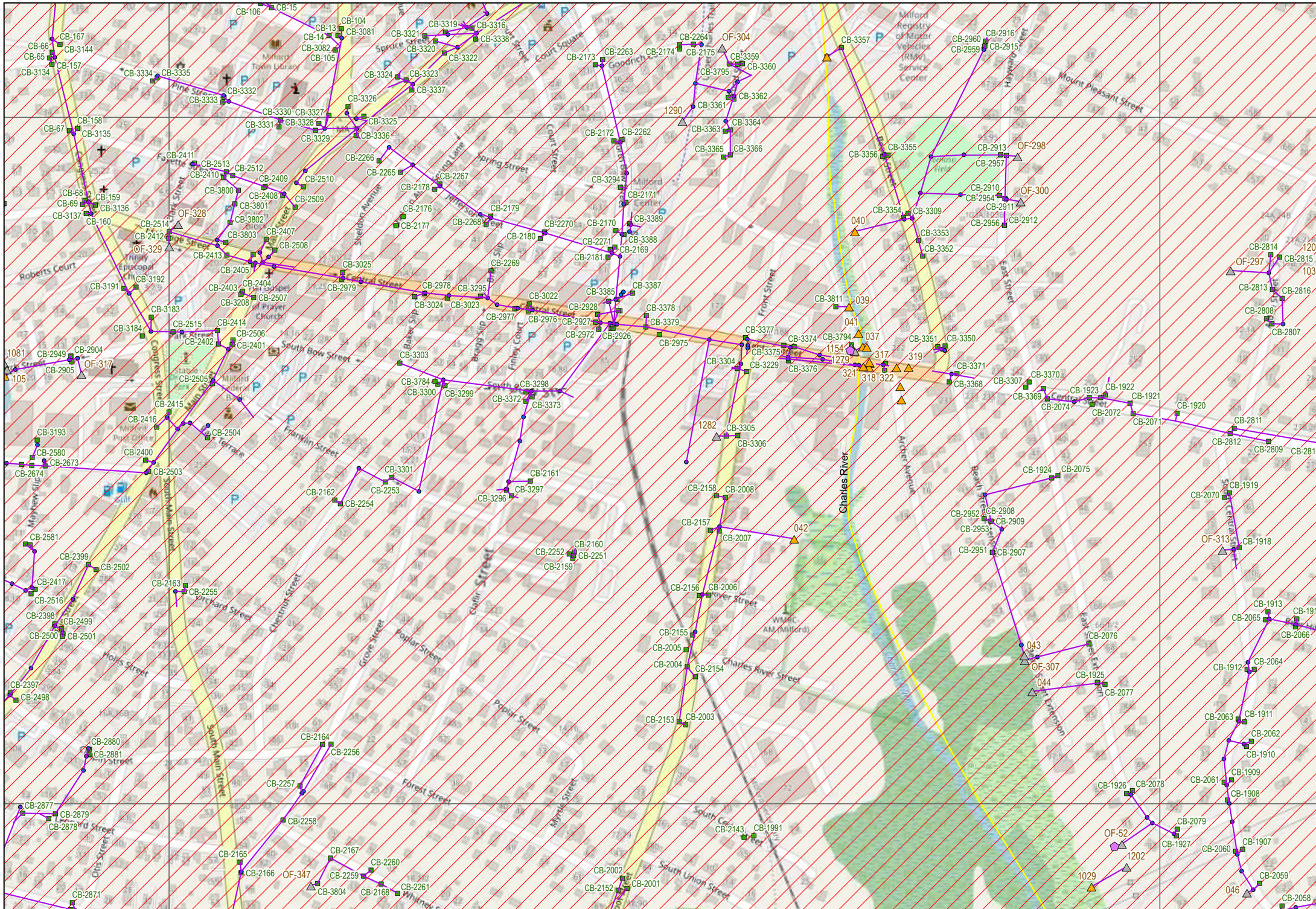

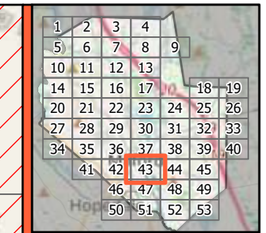

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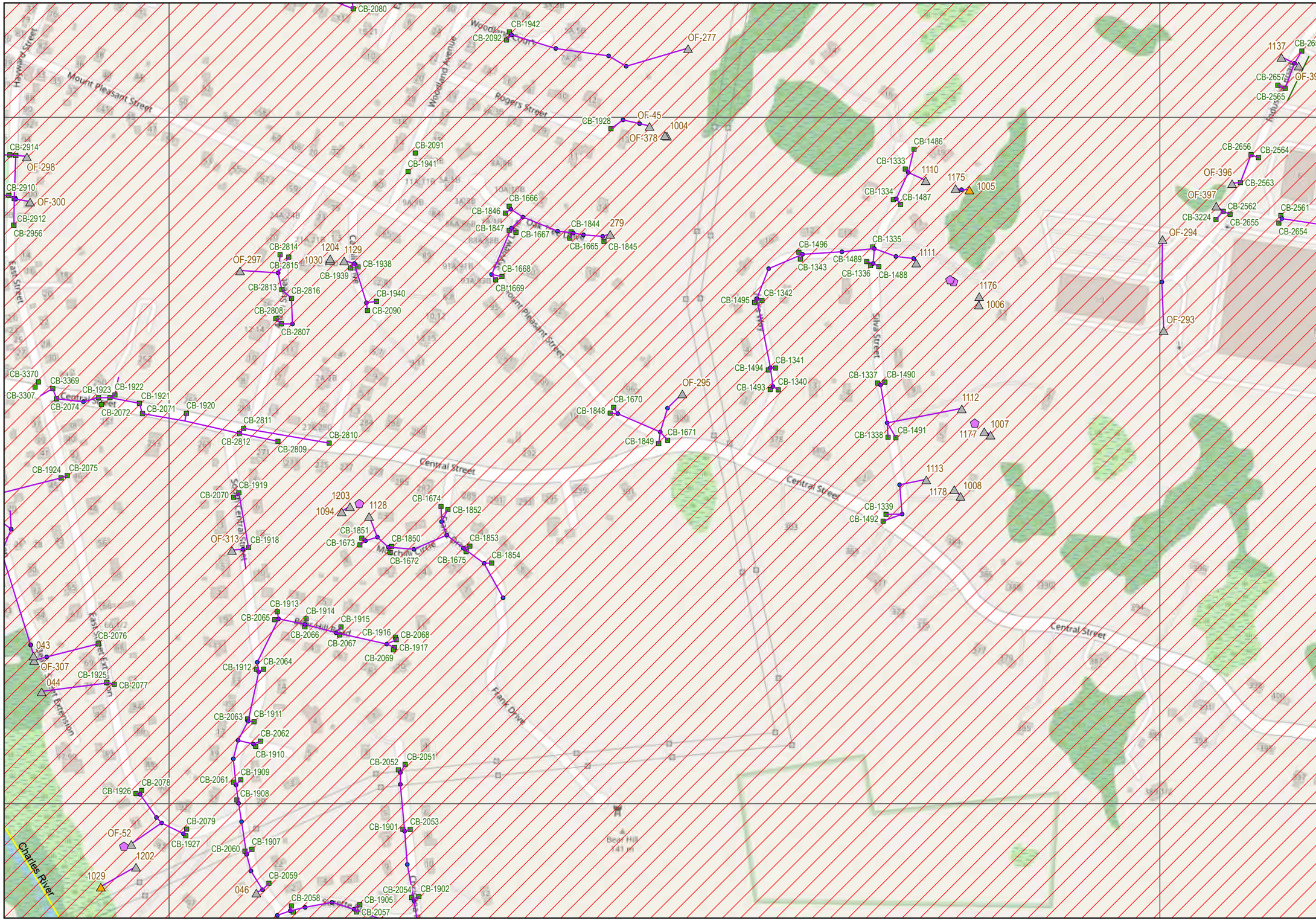

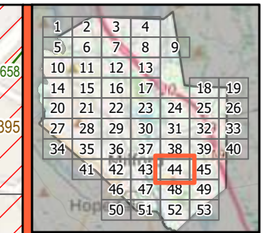

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Milford, Massachusetts

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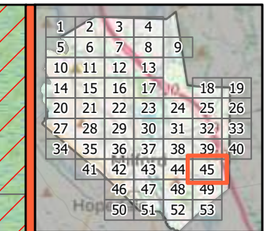

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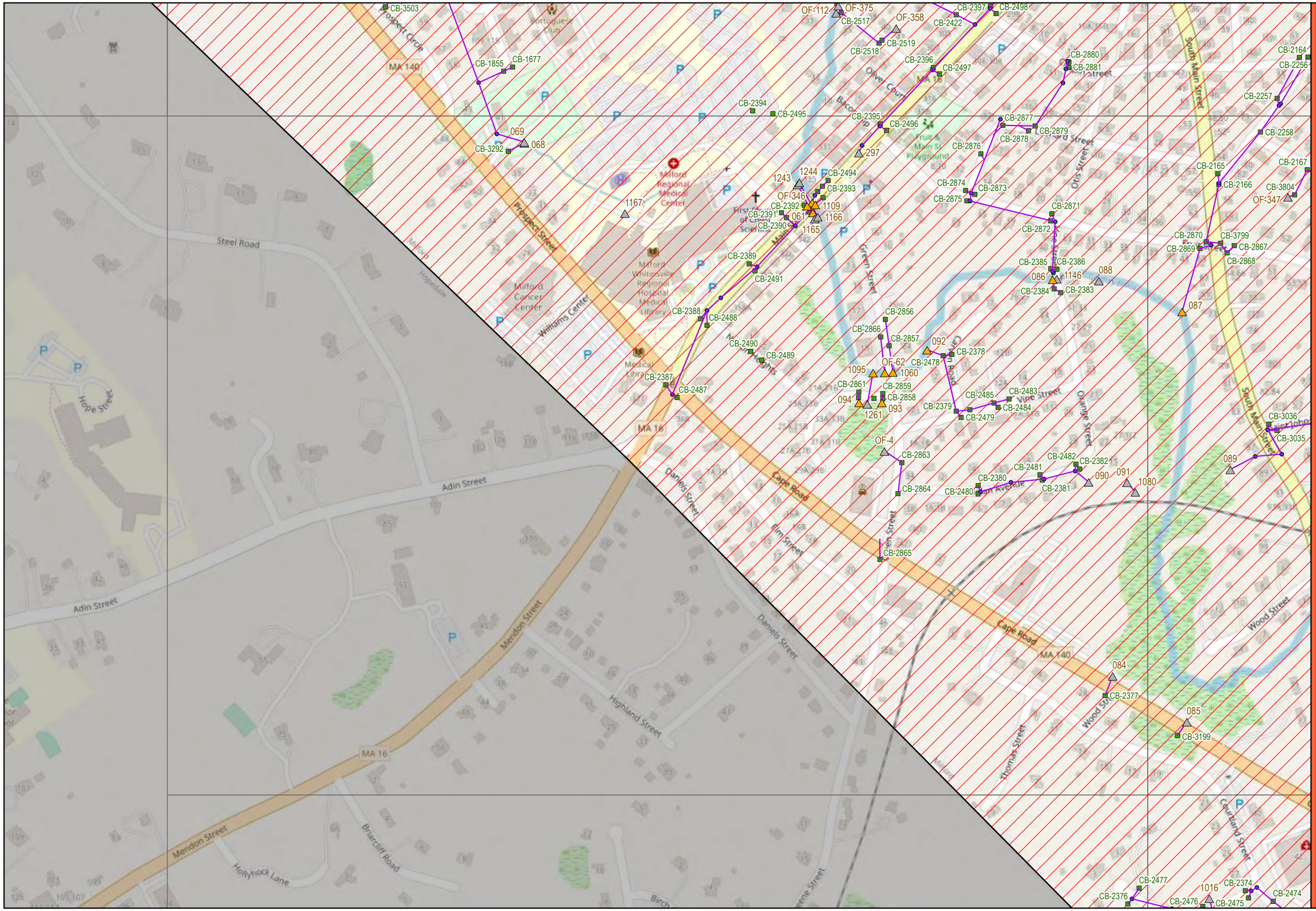

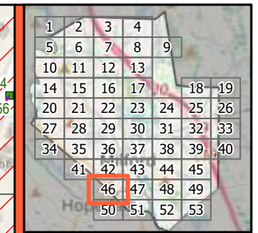

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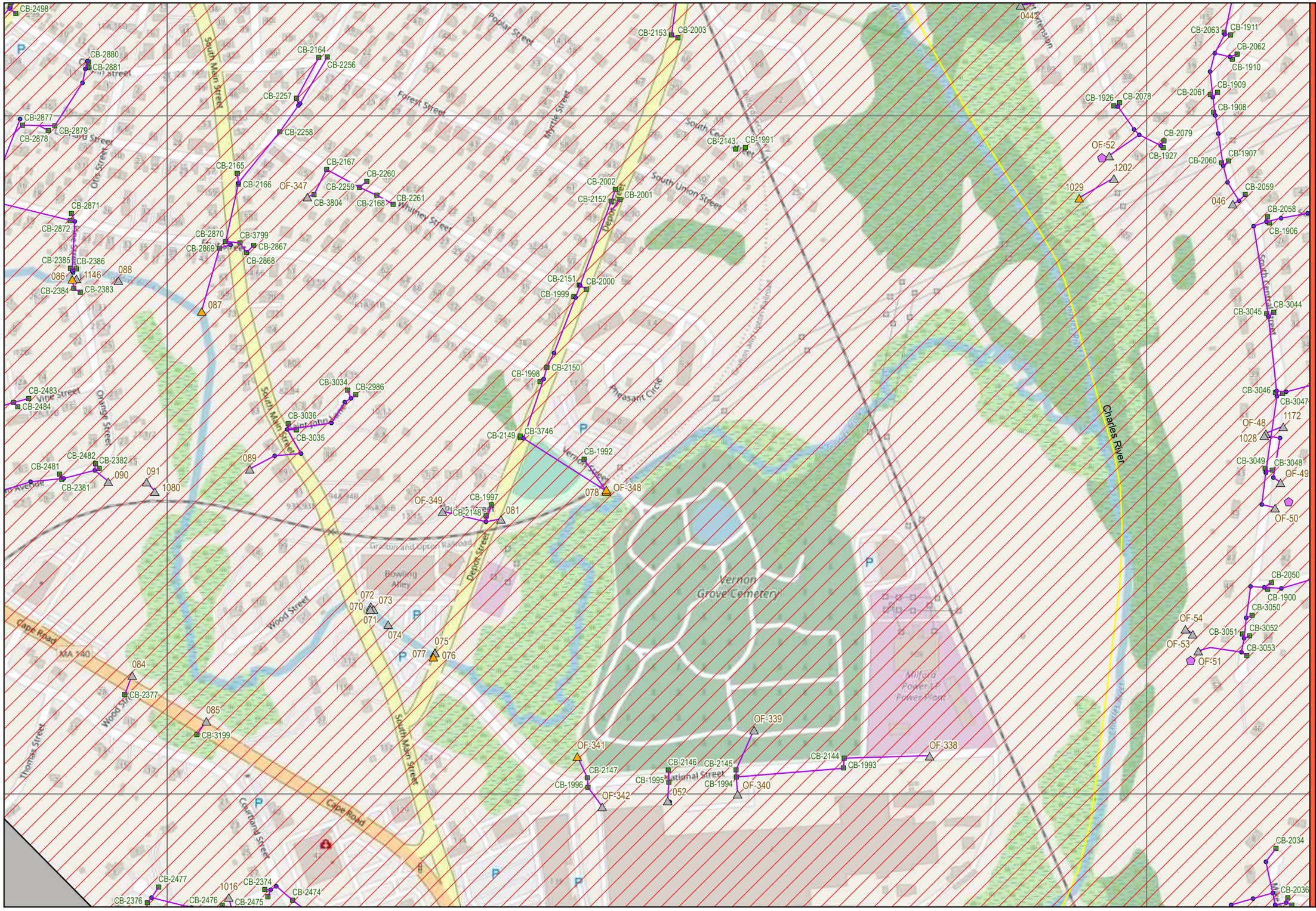

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Stormwater System

Milford, Massachusetts

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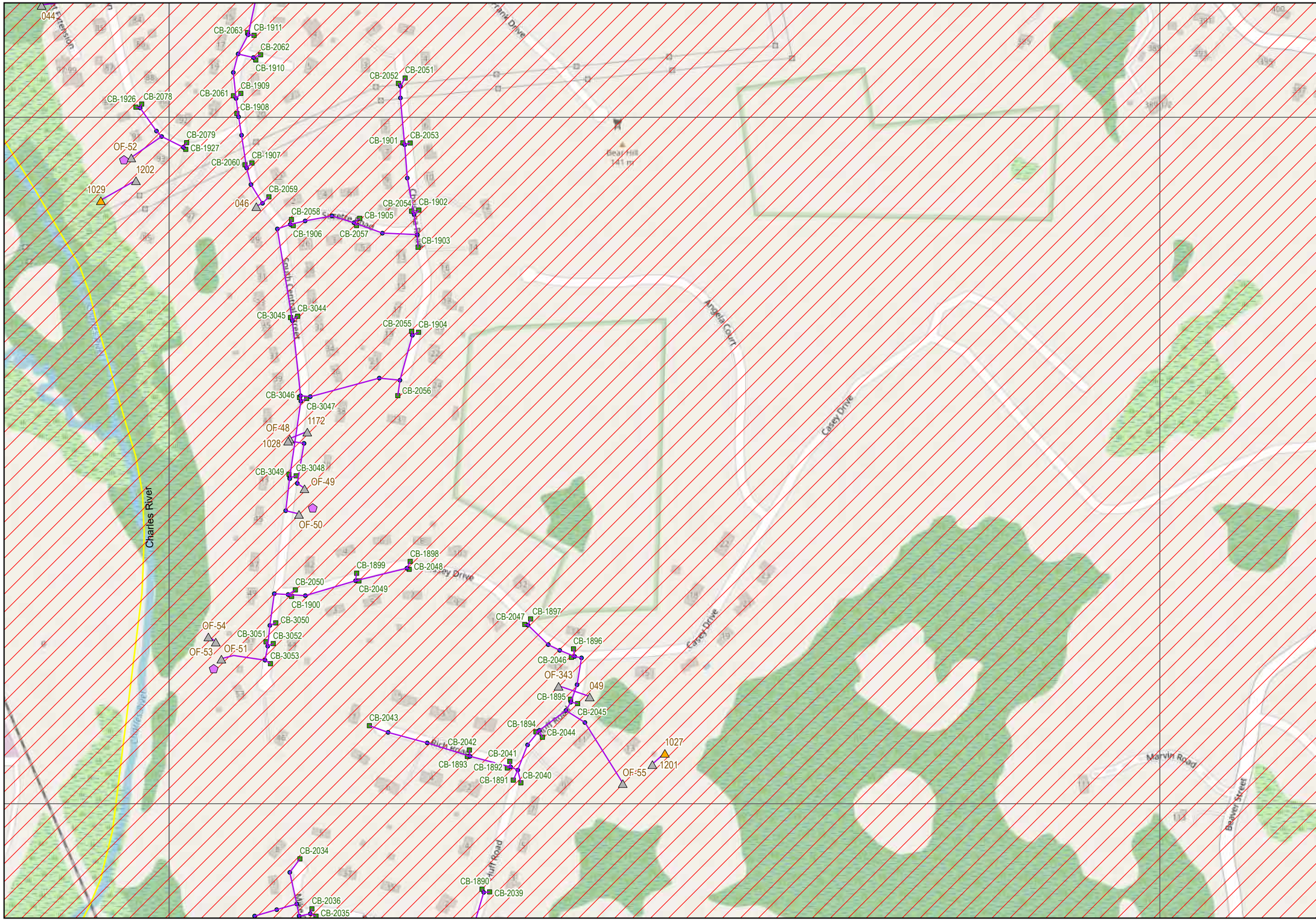

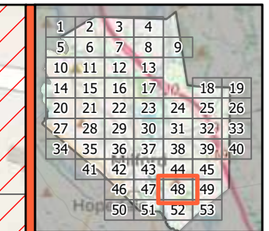

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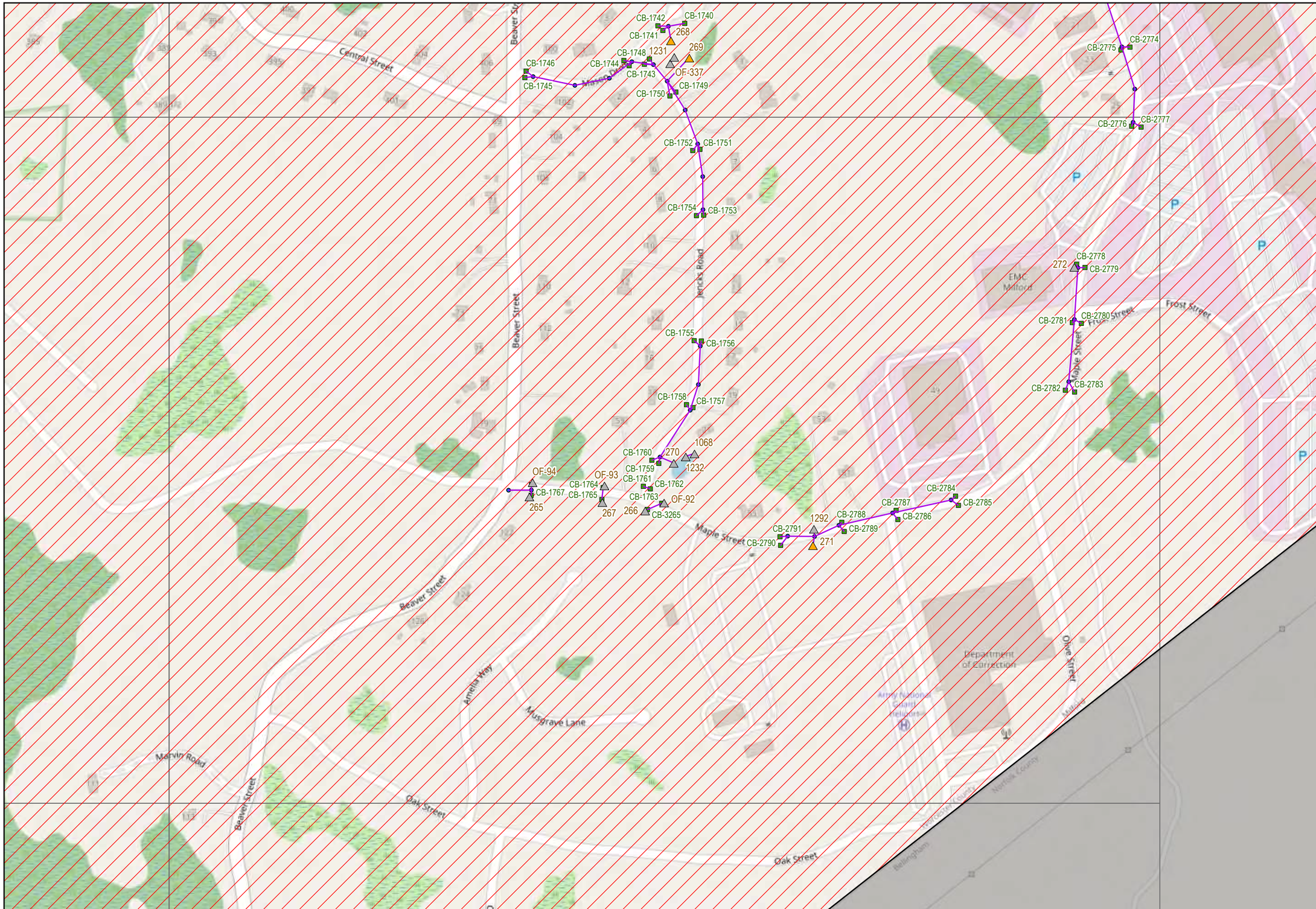

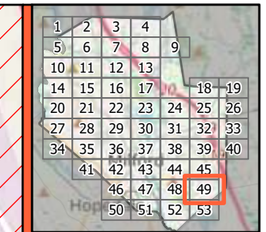

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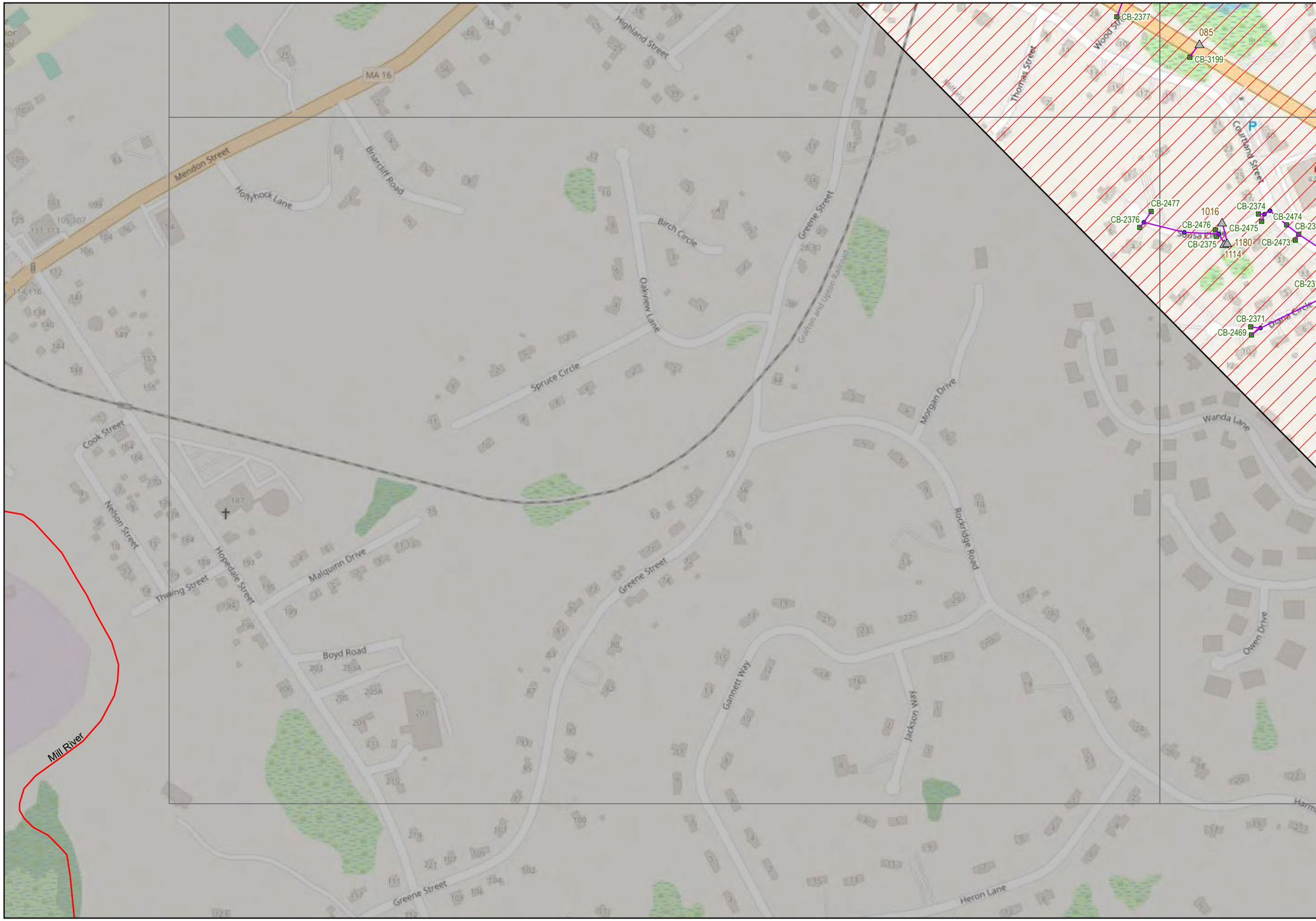

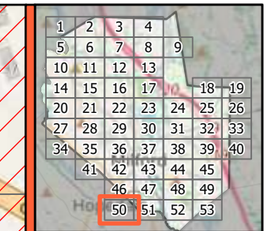

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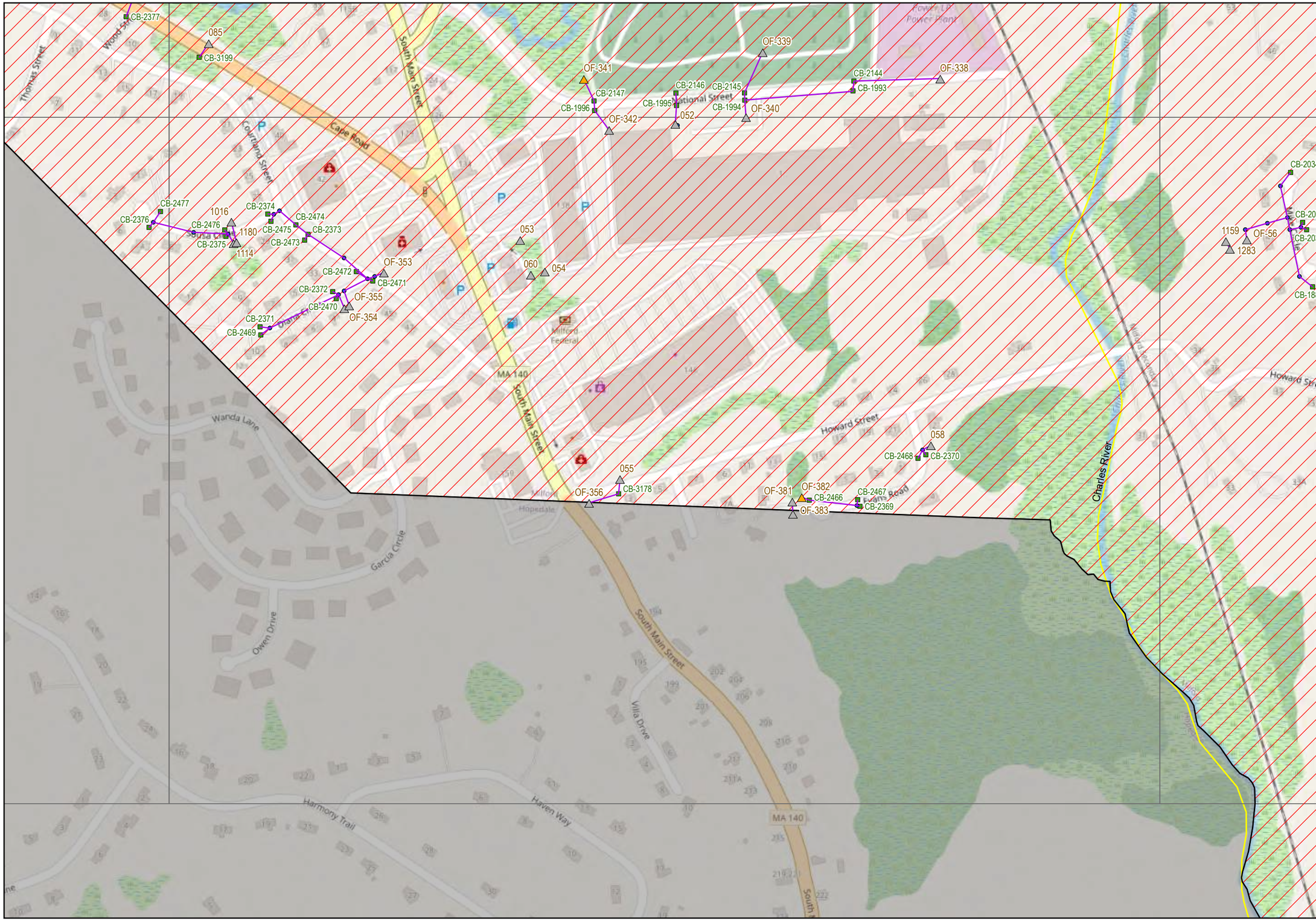

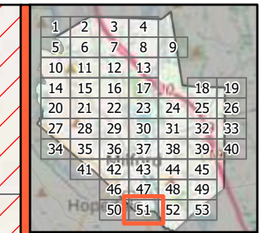

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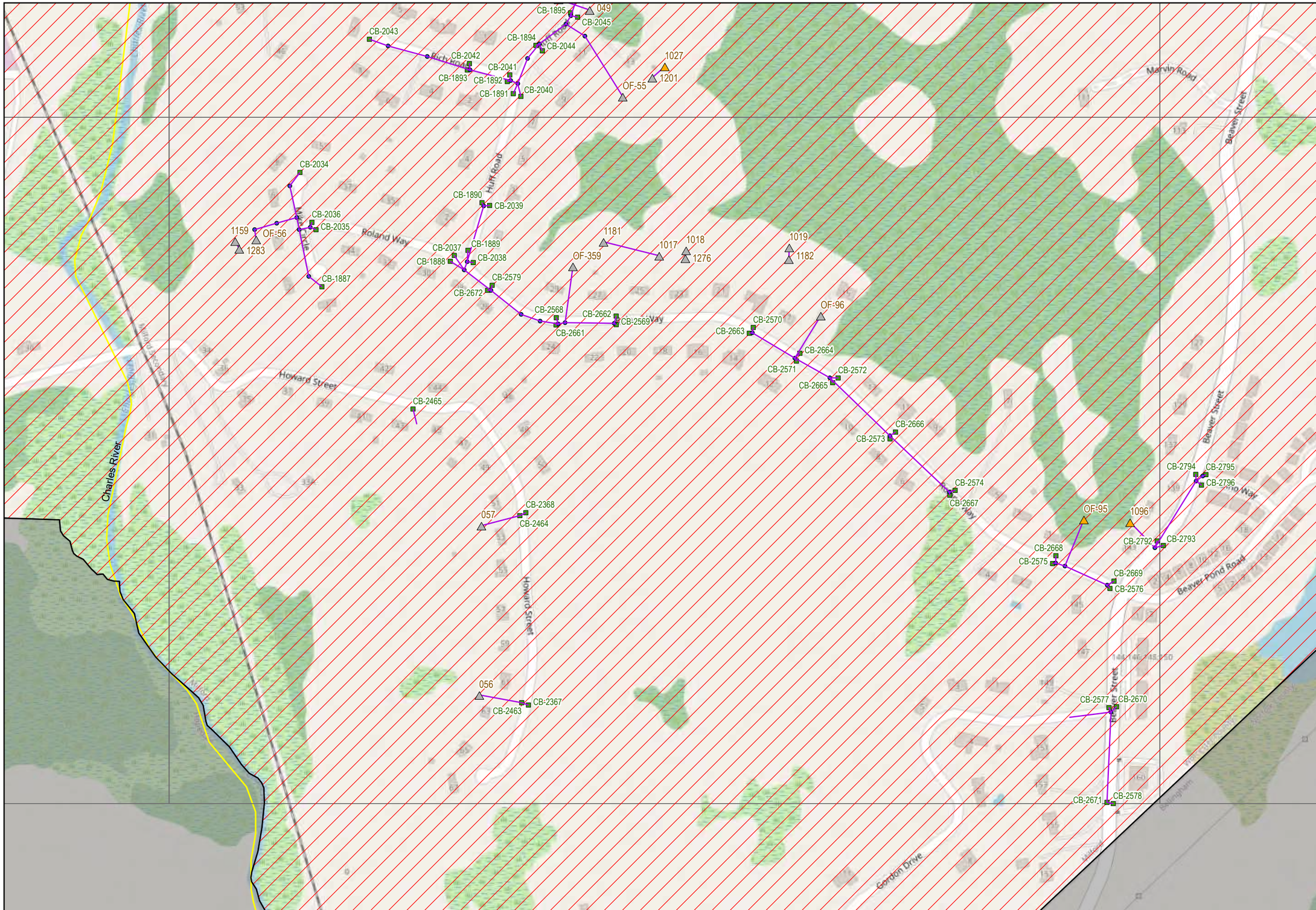

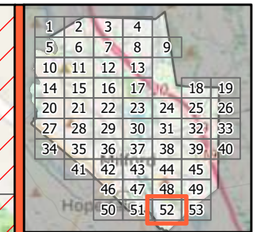

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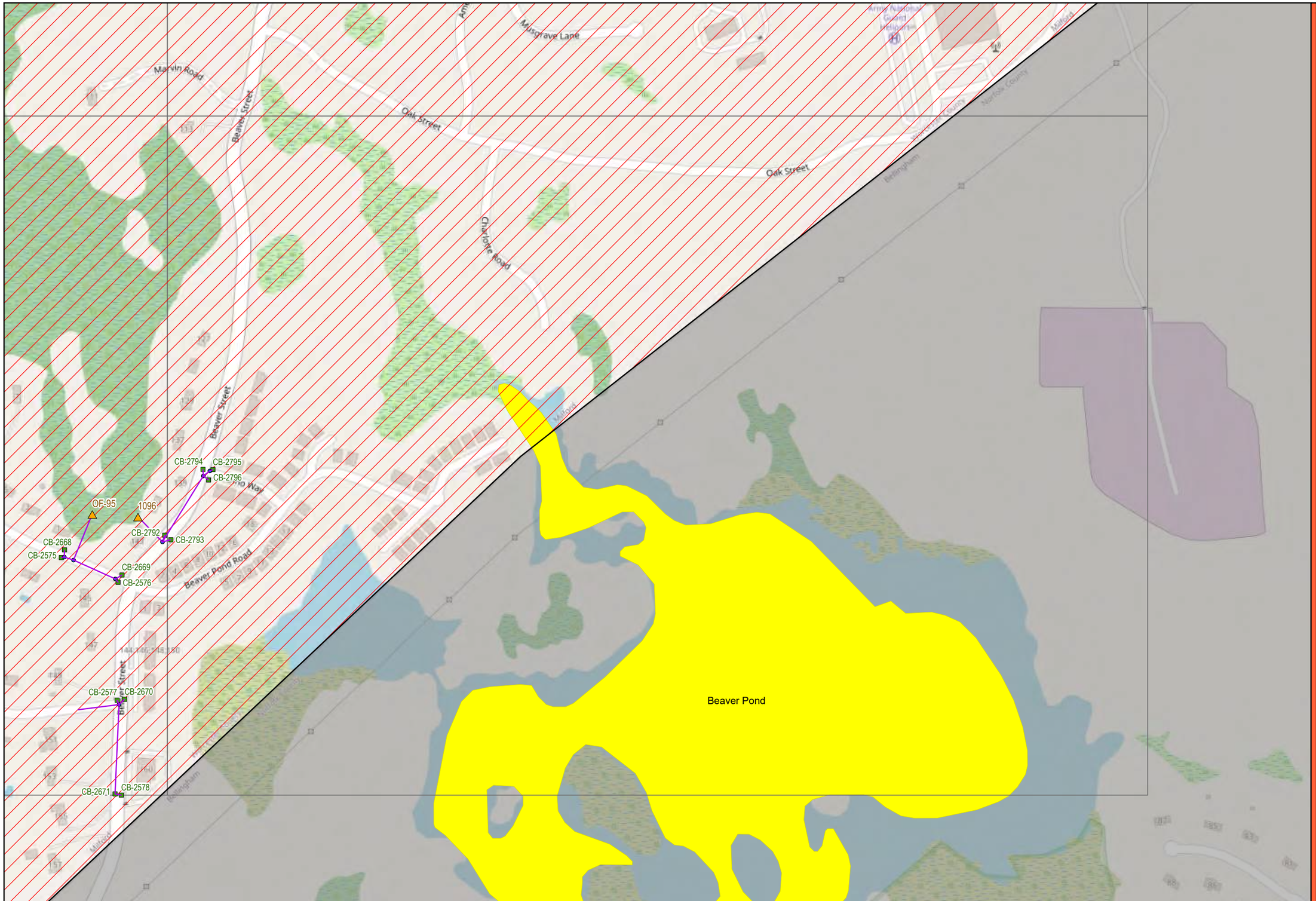

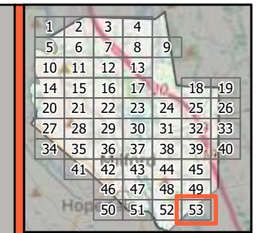

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N

0 150 300 Feet

ENVIRONMENTAL PARTNERS

ENVIRONMENTAL PARTNERS

1900 Crown Colony Drive, Suite 402
Quincy, MA 02169
P: 617.657.0200 F: 617.657.0201

envpartners.com

APPENDIX L

Illicit Discharge Detection and Elimination (IDDE) Plan

ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PLAN

Town of Milford

September 2021 (revision)

ENVIRONMENTAL PARTNERS

— An Apex Company —

Illicit Discharge Detection and Elimination (IDDE) Plan Revision History

MS4 Materials that supplement the 2019 IDDE Plan Document

Revision #	Date	Comments
0	6/2019	IDDE Plan Published
1	9/2021	Year 3 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

ENVIRONMENTAL PARTNERS
— An Apex Company —

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SECTION 1 INTRODUCTION

SECTION 1.1 MS4 PROGRAM

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed for The Town of Milford to address the requirements of the United States Environmental Protection Agency's (USEPA'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 requires 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-storm water discharges are allowed under the MS4 Permit unless the permittee, USEPA 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 detergent

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 them entirely).

SECTION 1.4 RECEIVING WATERS AND IMPAIRMENTS

Table 1-1 lists the "impaired waters" within the boundaries of Milford's regulated area based on the 2014 Massachusetts Integrated List of Waters produced by MassDEP every two years. 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 2016 Integrated List of Waters published by MassDEP in December 2020 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 were minor updates to the 2014 Integrated Lists of Waters that are now reflected in the 2016 Integrated Lists of Waters that apply to Milford. Impairments from one water body were updated: the Charles River segment MA72-01 now has new dewatering and flow regime alterations impairments.

Table 1-1 Impaired Waters
Milford, Massachusetts

Category	Water Body Name	Segment ID	Impairment(s)	Associated Approved TMDL
4a	Beaver Pond	MA72004	Mercury in Fish Tissue	42394
	Cedar Swamp Pond (Milford Pond)	MA72016	(Non-Native Aquatic Plants*) Dissolved Oxygen Mercury in Fish Tissue	
	Charles River	MA72-01	(Dewatering*) (Flow Regime Modification*) Dissolved Oxygen	
	Charles River	MA72-33	(Physical substrate habitat alterations*) Escherichia Coli (E. Coli) Nutrient/Eutrophication Biological Indicators	
	Echo Lake	MA72035	Mercury in Fish Tissue	
4c	North Pond	MA51112	(Non-Native Aquatic Plants*)	
5	Mill River	MA51-35	(Non-Native Aquatic Plants*) Aquatic Plants (Macrophytes) Metals PCBs In Fish Tissue	
	Charles River	MA72-03	Algae DDT in Fish Tissue Dissolved Oxygen Supersaturation Escherichia Coli (E. Coli) Organic Enrichment (Sewage) Biological Indicators Phosphorus, Total	

Category 4a Waters – impaired water bodies with a completed Total Maximum Daily Load (TMDL).
Category 4c Waters – impairment not caused by a pollutant—TMDL not 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 2016 MS4 Permit.
* TMDL not required (non-pollutant)

These impairments require additional sampling in accordance with Appendix G of the MS4 Permit. The Town must sample for dissolved oxygen, biological oxygen demand, and total phosphorus at outfalls discharging to Beaver Pond and Cedar Swamp Pond; and dissolved oxygen, biological oxygen demand, total phosphorus, and E. coli at outfalls discharging to the Charles River. Due to the Charles River Watershed's TMDL for pathogens, the Town must sample all outfalls for E. coli and fecal coliform. Similarly, due to the Upper/Middle Charles River Watershed's TMDL for phosphorus, the Town must also sample all outfalls for total phosphorus.

In order to comply with the 2016 MS4 Permit Appendix H, the Town of Milford must implement the illicit discharge program. Outfalls draining to Beaver Pond, Cedar Swamp Pond, Charles River (all segments) and Echo Lake shall be designated either problem outfalls or high priority outfalls 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

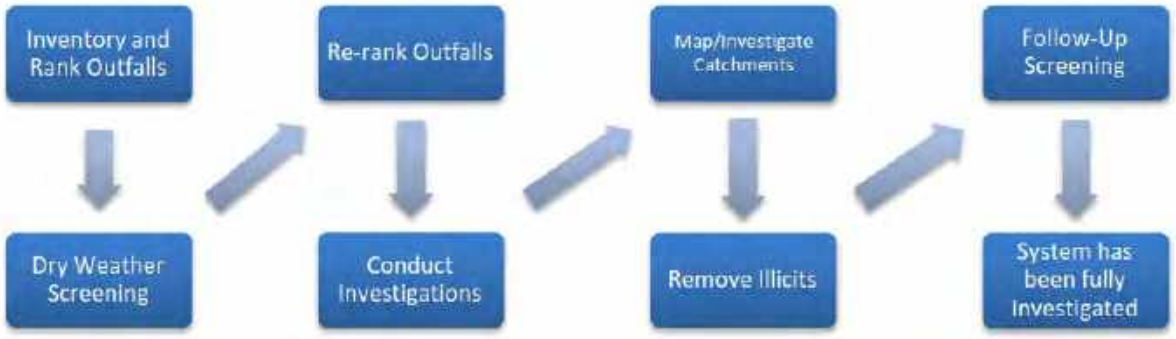

Table 1-2 IDDE Program Implementation Timeline

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 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 Milford has completed the following IDDE program activities consistent with the 2003 MS4 Permit requirements:

- Developed a map of outfalls and receiving waters
- 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:

- 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 Milford has developed and implemented a Stormwater Management General By-Law, which covers erosion and sediment control, post-construction stormwater management and discharge control. A copy of the Stormwater Management By-Law is provided in **Appendix A**. The Stormwater Management By-Law provides the Town of Milford 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
- Implement appropriate enforcement procedures and actions.

The Town of Milford is in the process of reviewing its Stormwater Management By-Law and related land use regulations and policies for consistency with the 2016 MS4 Permit and 2020 Permit Modifications.

SECTION 2.2 STATEMENT OF RESPONSIBILITIES

The Milford Highway 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:

- Highway Department – Highway Supervisor, Scott Crisafulli
- Planning and Engineering Department – Town Engineer, Michael Dean, P.E.
- Planning and Engineering Department – Town Planner, Larry L. Dunkin, AICP
- Board of Health
- Conservation Commission.

SECTION 3 STORMWATER SYSTEM MAPPING

The Town of Milford 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 Highway Department is responsible for updating the stormwater system mapping pursuant to the 2016 MS4 Permit. The Town of Milford 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 Milford has completed the following updates to its stormwater mapping to meet the Phase I requirements:

- Outfalls and receiving waters
- 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 USEPA approved Massachusetts Integrated List of Waters report *(taken from USGS/MassDEP Hydrography data updated April 2017)*
- Initial catchment delineations. Any available system data and topographic information may be used to produce initial catchment delineations *(attached as Appendix C and further developed in Section 5.1).*

The following table contains information regarding the total number of drainage structures mapped within the MS4 Urbanized Area in Milford. It has been compiled using data collected by the Town.

Table 3-1 Summary of Mapped MS4 Structures

Structure Type	Number of Structures
Outfalls	248
Catch Basins	3807
Drain Manholes	1944
Drain Pipes	55875
Culverts	18
BMPs	32
Inlets	399
Outlets	380
Scuppers	5
Swales	42
Interconnections	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 Milford has completed the following updates to its stormwater mapping to meet the Phase II requirements:

- 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

SECTION 3.3 ADDITIONAL RECOMMENDED MAPPING ELEMENTS

Although not a requirement of the 2016 MS4 Permit, the Town of Milford 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 (SSO)

The 2016 MS4 Permit requires municipalities to prohibit illicit discharges, including sanitary septic and sewer overflows (SSOs), to the separate storm sewer system. SSOs are discharges of untreated sanitary wastewater from a municipal sanitary septic or 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 has completed an inventory of SSOs that have discharged to the MS4 within the five (5) years prior to the effective date of the 2016 MS4 Permit, based on review of available documentation pertaining to SSOs. The inventory included 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 with data on each of the ten SSOs and as reference for future use.

Upon detection of an SSO, the Town of Milford 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 Milford will provide oral notice to USEPA within 24 hours and written notice to USEPA and MassDEP within five (5) days of becoming aware of the SSO occurrence.

The inventory in **Table 4-1** is updated by the Board of Health 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
Milford, Massachusetts
Revision Date: September 2021

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]
495 Pump Station	Entered MS4, catch basin to receiving water	4/2/14	9:55am	9:55am	200-300 gal	Crack in sewer force main	Repaired force main, septic company pumped drain and retaining pond, spread pulverized lime	
Field Pont Pump Station	Entered MS4, ground surface discharge	4/12/14	11:35am	2:30pm	<100 gal	Leak in sewer force main	Repaired force main	
West Pine Street and Gibon Street	Entered MS4, ground surface discharge	9/2/15	3:10pm	3:45pm	<100 gal	Grease blockage	Area cleaned, disinfected with 2 bags of lime	
495 Pump Station on Route 109	Entered MS4, ground surface discharge	3/10/16	11:10am	11:22am	<200 gal	Force main break	Force main repaired, area cleaned and disinfected with lime	
18 Purdue Street near Field Pond Pump Station	Entered MS4, ground surface discharge	5/21/16	4:10pm	8:00pm	Unknown	Force main break	Force main repaired, area cleaned and disinfected with lime	
18 Purdue Street near Field Pond Pump Station	Entered MS4, ground surface discharge	7/25/17	5:00pm	5:45pm	<100 gal	Force main break	Force main repaired, area cleaned and disinfected with lime	
31 Parkhurst Street	Entered MS4, ground surface discharge	8/3/17	4:10pm	5:00pm	<100 gal	Grease blockage	Jetted the line to remove grease blockage, area cleaned and disinfected with lime	
18 Purdue Street near Field Pond Pump Station	Entered MS4, ground surface discharge	3/14/18	6:28pm	8:05pm	<100 gal	Force main break	Force main repaired, area cleaned and disinfected with lime	
173-250 Main Street	Backup into property basement	11/3/18	-	-	Unknown, overflow confined to businesses	Sewer system blockage	Flushed and cleared partial blockage in manhole; cleaning/disinfecting addressed by property owners	
12-14 Colonial Road	Discharge Statement	6/16/19	-	-	Unknown	Grease blockage	Mitigation Completed	

[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 schedule

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. Catchment delineations will be refined each year as catchment investigations are completed.

SECTION 5.2 OUTFALL AND INTERCONNECTION INVENTORY AND INTITIAL RANKING

The Highway 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.

To date, Milford has identified one (1) Problem Outfall and zero (0) Problem Interconnections.

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.

    To date, Milford has identified 87 High Priority Outfalls and 8 High Priority Interconnections.

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

    To date, Milford has identified 169 Low Priority Outfalls and one (1) Low Priority Interconnection.

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; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

    To date, Milford has identified zero (0) Excluded Outfalls or Interconnections.

Outfalls are ranked into the above priority categories (<u>except for excluded outfalls, which are excluded from the IDDE program</u>) 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 on responses provided by the Town of Milford in May 2019, and the ranking has since been updated based on field investigations completed. The initial characteristics considered include:

- **Previous screening results** – previous screening/sampling results indicate likely sewer input (see criteria above for Problem Outfalls).
    - 240 outfalls screened during dry weather outfall.
    - Outfall screening results showed no sign of likely sewer input.
- **Past discharge complaints and reports.**
    - None received.

- **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 (236 MPN/100mL)
    - Ammonia levels above 0.5 mg/L
    - Surfactants levels greater than or equal to 0.25 mg/L
- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
    - Generating sites were located within the A, C, D, E, F, G, J and K catchments.
- **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.
    - Determined by age of parcel, "year built" data.
- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.
    - None reported.
- **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.
    - None in Milford.
- **Surrounding density of aging septic systems** – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.
    - Catchments C, D, G, K, O, P, Q, L, U, V, W, and X overlay areas with older septic systems.
- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
    - Godfrey Brook (catchments A, D and F).
    - Hospital Brook (catchment E)
    - O'Brien Brook (catchment E)
    - Ivy Brook (catchment U)
    - Charles River (catchment D)
- **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**.

Appendix C contains the initial outfall priority ranking matrix and catchment delineation mapping completed for the Town. Based on this initial ranking, the highest-ranking catchments are associated with Beaver Pond, Cedar Swamp Pond (also known as Milford Pond), the Charles River (both segments), Echo Lake, and Mill River.

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 Highway Department is 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 Jionzo Road Station (Station ID KMAMILFO29) If this station is not available or not reporting current weather data, then the Bowdoin Station (Station ID KMAMILFO16) 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	Hand held meter, if available, for testing for various water quality parameters such as ammonia, surfactants and chlorine
Test Kits	Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day
Label Tape	For labeling sample containers
Sample Containers	Make sure all sample containers are clean. Keep extra sample containers on hand at all times. Make sure there are proper sample containers for what is being sampled for (i.e., bacteria requires sterile containers).
Pry Bar or Pick	For opening catch basins and manholes when necessary
Sandbags	For damming low flows in order to take samples
Small Mallet or Hammer	Helping to free stuck manhole and catch basin covers

Equipment	Use/Notes
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 will 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

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

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

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Ammonia	**EPA**: 350.2, **SM**: 4500-NH3C	0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2, No preservative required if analyzed immediately
Surfactants	**SM**: 5540-C	0.01 mg/L	48 hours	Cool ≤6°C

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

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 USEPA 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 199 outfalls when the NOI was submitted in 2018. Town field staff, or hired representatives, screened a portion of the outfalls as part of the 2003 MS4 Permit. Since the start of the new 2016 MS4 Permit, the Town has completed dry weather screening of the remaining outfalls, in addition to some newly identified outfalls. Additionally, based on field observations, the Town removed 32 previously identified outfall structures from the Town's outfall inventory for one of the following reasons: the structures were verified as culvert outlets/inlets; the drainage network changed since the original mapping was completed; or the structure was located outside the Town's MS4 area. Screening since the 2016 MS4 Permit began saw the total outfall inventory increase to 248. However, eight (8) of these 248 outfalls that discharge to culverted sections of the Charles River require specially trained field staff to access and have not been

screened yet under the 2016 MS4 Permit. Of the 240 accessible outfalls, field staff observed that 193 were dry and 47 were flowing during dry weather. Screening and sampling results are attached in **Appendix E**.

Screenings of all interconnection locations were also completed. The Town—or hired representatives—mapped, inventoried, and field-verified all interconnection locations with other MS4s, including drainage belonging to the Massachusetts Department of Transportation (MassDOT) and the Towns of Medway and Hopkinton. In total, 14 interconnection locations were identified, nine (9) of which are locations where the Town of Milford's MS4 drains into another MS4. Those nine (9) locations were screened during dry weather on June 28, 2021 and August 4, 2021. Eight (8) interconnections were found to be dry during dry weather, and one (1) interconnection location with the MassDOT was found to be flowing and was sampled on August 4, 2021. Interconnection sampling results are included in **Appendix E** along with outfall sampling results.

SECTION 6.5 FOLLOW-UP RANKING OF OUTFALLS AND INTERCONNECTIONS

The Town of Milford is responsible for updating the ranking of outfalls and interconnections. Outfalls/interconnections where relevant information was 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 have been 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 screening over the first three (3) years of the permit term (June 30, 2021). 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 will be recorded and reported in each annual report.

SECTION 7.1 SYSTEM VULNERABILITY FACTORS

The Highway 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 **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.

An SVF inventory is in the process of being developed for each catchment (see **Appendix F**) and will continue to be filled out for each catchment as SVFs are identified. The SVF inventory will be included in each annual report.

SECTION 7.2 DRY WEATHER MANHOLE INSPECTIONS

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

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

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.

- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all catchments identified for investigation, during dry weather, field crews will 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 will be 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 will 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 will proceed as follows:

1. Manholes will be 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 will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis will be 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 will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
4. Subsequent key junction manhole inspections will 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 will be 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 Highway Department will be responsible for implementing the wet weather outfall sampling program and making updates as necessary.

Outfalls will be 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 will proceed as follows:

1. At least one wet weather sample will be collected at the outfall for the same parameters required during dry weather screening.

2. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall. There is no specific rainfall amount that will trigger sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.

3. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in **Section 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 will be 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 will be used to isolate and confirm the source of the illicit discharge. The following methods may be used in isolating and confirming the source of illicit discharges

- Sandbagging
- 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 Highway 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 sandbag/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 place 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 (i.e., 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 their 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 Milford 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 Sampling

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 CATCHMENT INVESTIGATION WORK COMPLETED TO DATE

The Town of Milford has begun conducting catchment investigations. On July 27 and August 3 and 4 of 2021, Town representatives visited five (5) catchments during dry weather conditions. These catchments were selected based on their high priority ranking in the outfall catchment ranking table. No indicators of likely sewer input were observed. Catchment investigations for four (4) out of the five (5) catchments visited are considered complete, pending refined catchment delineation and completion of the SVF inventory. The full catchment investigation memo is included in **Appendix E.**

The Town has also begun inventorying SVFs and conducting wet weather sampling. Town representatives sampled 15 outfalls during wet weather conditions on July 9 and August 5, 2021. These outfall catchments were visited because an SVF was identified, which consisted of a previous SSO event. During sampling, one (1) outfall (OF-504) on Jionzo Street was identified as a Problem Outfall based on olfactory evidence. **Appendix E** contains the complete wet weather sampling memo and results.

SECTION 7.7 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 will be evaluated on an annual basis. The evaluation will be documented in the annual report and will include 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 Bylaw or Ordinance)

TOWN OF MILFORD, MASSACHUSETTS

STORMWATER MANAGEMENT GENERAL BY-LAW

EROSION AND SEDIMENT CONTROL,
POST-CONSTRUCTION STORMWATER MANAGEMENT AND
DISCHARGE CONTROL

10-24-05

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TOWN OF MILFORD, MASSACHUSETTS
GENERAL BY-LAWS

ARTICLE 36

STORMWATER MANAGEMENT BY-LAW

Adopted by Town Meeting 10-24-05
Approved by Attorney General 2-9-06

SECTION I. PURPOSE AND AUTHORITY

1.1 Purpose

The purpose of this By-Law is to protect, maintain, and enhance the public health, safety, and general welfare of the citizens of Milford, and protect and enhance the water quality of watercourses and water bodies, through the management of land development by establishing minimum requirements and procedures to control the adverse impacts associated with stormwater runoff and through the regulation of non-stormwater discharges to the municipal separate storm sewer system.

1.2 Administration

This By-Law shall be administered and enforced by the Town of Milford, acting by and through its Town Engineer, under the supervision of the Board of Selectmen. In the absence of the Town Engineer, administration and enforcement action may be undertaken by such individual or individuals as may be designated in writing by the Board of Selectmen.

SECTION II. DEFINITIONS

The following definitions describe the meaning of the terms used in this By-Law:

"Adverse impact" means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses, which are or may potentially be harmful or injurious to human health, welfare, safety or property, biological productivity, diversity, or stability, or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

"Best management practice (BMP)" is a structural or biological device that temporarily stores or treats urban stormwater runoff to reduce flooding, remove pollutants, and manage stormwater runoff. A BMP may also be a non-structural practice that reduces pollutants at their source. BMPs are described in a stormwater design manual, Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Massachusetts Department of Environmental Protection [MADEP], as updated or amended).

"Construction activity" is disturbance of the ground by removal of vegetative surface cover or topsoil, grading, excavation, clearing or filling.

"Disturbance" is any land clearing, grading, bulldozing, digging, or similar activities.

"Hydrology model" may include one of the following:

a. TR-20, a watershed hydrology model developed by the Natural Resources Conservation Service (NRCS) that is used to route a design storm hydrograph through a pond;
b. TR-55, or Technical Release 55, "Urban Hydrology for Small Watersheds", a publication developed by the NRCS to calculate stormwater runoff and an aid in designing detention basins; or
c. HydroCad or other comparable software models.

"Illegal discharge" is any direct or indirect non-stormwater discharge to the municipally owned separate storm sewer system, except as exempted in Section X of this By-Law.

"Illicit connections" are defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the municipally-owned separate storm sewer system including but not limited to any conveyances which allow any non-stormwater 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.

"Municipally owned separate storm sewer system (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

a. Owned or operated by a State, city, township, county, district, association, or other public body (created by or pursuant to State law) including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, that discharges into waters of the state.
b. Designed or used for collecting or conveying stormwater;
c. Which is not a combined sewer; and
d. Which is not part of a Publicly Owned Treatment Works."

"National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit" means a permit issued by EPA 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.

"Waters of the United States" are surface watercourses and water bodies as defined at 40 CFR § 122.2, including all natural waterways and defined channels and depressions in the earth that may carry water, even though such waterways may only carry water during storms and may not carry stormwater during all times and seasons.

SECTION III. APPLICABILITY

3.1 Applicability

This By-Law shall apply to all flows entering the municipally owned separate storm sewer system (MS4) generated on any developed and undeveloped lands within the Town of Milford including any amendments or revisions thereto, unless explicitly exempted by an authorized enforcement agency.

Prior to the issuance of any building permit for any proposed development listed below, a stormwater management permit, or a waiver of the requirement for a stormwater management permit, must be approved by the Office of Planning and Engineering. No person shall, on or after the effective date of this By-Law, initiate any land clearing, land grading, earth moving or development activities without first complying with this By-Law. The following activities shall be required to submit drainage reports, plans, construction drawings, specifications and as-constructed information in conformance with the requirements of this By-Law:

3.1.1 Construction activities of any kind disturbing greater than 43,560 square feet (1 acre) or which is part of a common plan of development or sale that will disturb greater than 43,560 square feet (1 acre).

3.2 Exemptions

To prevent the adverse impacts of stormwater runoff, the Milford Office of Planning and Engineering has developed a set of performance standards that must be met at new development sites. These standards apply to construction activities as described under Section 3.1. The following activities may be exempt from these stormwater performance standards:

3.2.1 Any agricultural activity which is consistent with an approved soil conservation plan prepared or approved by the Natural Resource Conservation Service.

3.2.2 Any logging which is consistent with a timber management plan approved under the Forest Cutting Practices Act by Massachusetts Department of Environmental Management.

3.2.3 Additions or modification to existing single-family structures.

3.2.4 Any emergency activity that is immediately necessary for the protection of life, property or the environment, as determined by the Office of Planning and Engineering.

3.2.5 Construction activities on sites with an overall area greater than one acre with written certification by a registered professional engineer or registered land surveyor that the land disturbance will be less than one acre.

3.2.6 Projects permitted and approved by the Town of Milford prior to the effective date of this By-Law.

3.2.7 Projects that have filed a Notice of Intent with the Milford Conservation Commission and that included a fully executed Stormwater Management Form and that were designed in conformance with the MADEP's Stormwater Management Policy and the Stormwater Design Manual, and that have obtained a valid Order of Conditions from the Town of Milford Conservation Commission or the MADEP.

3.3 Stormwater Design Manual

A stormwater design manual, Stormwater Management, Volume One: Stormwater Policy Handbook and Volume Two: Stormwater Technical Handbook (March, 1997, MADEP, as updated or amended) is hereby incorporated by reference as part of this By-Law, and shall furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the requirements of this By-Law.

SECTION IV. COMPATIBILITY WITH OTHER PERMIT AND BY-LAW REQUIREMENTS

This By-Law is not intended to interfere with, abrogate, or annul any other by-law, rule or regulation, statute, or other provision of law. The requirements of this By-Law should be considered minimum requirements, and where any provision of this By-Law imposes restrictions different from those imposed by any other by-law, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

SECTION V. PERMIT PROCEDURES AND REQUIREMENTS

5.1 Permit Required

No land owner or land operator shall commence any work under a Building Permit, a Definitive Plan for Subdivision, or other grading or land development permit required for land disturbance activities, and no land owner shall commence land disturbance activities, without approval of a Stormwater Management Permit from the Office of Planning and Engineering and meeting the requirements of this By-Law, unless the project has included a fully executed Stormwater Management Form and was designed in conformance with the MADEP's Stormwater Management Policy and the Stormwater Design Manual, and which has obtained a valid Order of Conditions from the Town of Milford Conservation Commission or the MADEP.

5.2 Application Requirements

Application for approval of a Stormwater Management Permit shall include the following:

5.2.1 A complete Stormwater Management and Erosion and Sediment Control Plan (Plan) or an application for waiver shall be submitted to the Milford Office of Planning and Engineering for review and approval for any proposed development specified in Section 3.1 prior to or concurrently with any building permit application or Preliminary or Definitive Plan for subdivision approval. Three copies of the Plan shall be submitted, and clearly labeled, along

with other documents required in the zoning by-law for site plan review. The Plan shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire development. The Plan shall serve as the basis for all subsequent construction.

5.2.2 An Operation, Maintenance and Inspection Schedule.

5.2.3 Non-refundable permit review and inspection fee.

The applicant may request, and the Milford Office of Planning and Engineering may grant, a waiver from any information requirements it judges to be unnecessary to the review of a particular plan.

5.3 Procedures for Review and Approval of Stormwater Permits

5.3.1 The procedures for review and approval of stormwater management plans shall be consistent with Section 5.4 Criteria for Review of Stormwater Permits and Section 5.5 Office of Planning and Engineering Action, as appropriate to the use.

5.3.2 The Office of Planning and Engineering shall have seven days from the receipt of the application to review the application for administrative completeness.

5.3.3 The Office of Planning and Engineering shall take final action within twenty-one days of the receipt of a complete application unless such time is extended by agreement between the applicant and the Office of Planning and Engineering. The twenty-one days includes the seven day administrative completeness review period (Section 5.3.2) for applications found to be complete. The twenty-one day review period will re-commence upon receipt of a re-submitted application for those applications found to be administratively incomplete.

5.4 Criteria for Review of Stormwater Permits

In addition to other criteria used by the Milford Office of Planning and Engineering in making permit decisions, for the uses specified in this By-Law, the Office of Planning and Engineering must also find that the Stormwater Management Plan submitted with the permit application meets the following criteria:

5.4.1 The Stormwater Management Plan and the Erosion and Sediment Control Plan are consistent with the Purposes and Objectives of this Bylaw in Section I.

5.4.2 The Stormwater Management Plan meets the Performance Standards described in Section VII.

5.4.3 The Erosion and Sediment Control Plan must meet the Design Requirements in Section VIII.

5.5 Office of Planning and Engineering Action

The Office of Planning and Engineering's action, rendered in writing and submitted to the applicant and the appropriate Town Department(s) and Board(s), shall consist of either:

5.5.1 Disapproval of the Stormwater Management Permit Application based on a determination within seven days of the receipt of the application that the application is administratively incomplete;

5.5.2 Approval of the Stormwater Management Permit Application based upon determination that the proposed plan meets the requirements in Section I and the standards in Section VII and Section VIII and will adequately protect the water resources of the community and is in compliance with the requirements set forth in this By-Law;

5.5.3 Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Office of Planning and Engineering which will ensure that the project meets the purposes in Section I and the standards in Section VII and Section VIII and adequately protects water resources, as set forth in this By-Law; or

5.5.4 Disapproval of the Stormwater Management Permit Application based upon a determination that the proposed plan, as submitted, does not meet the requirements in Section I and the standards in Section VII and Section VIII or adequately protect water resources, as set forth in this By-Law.

Failure of the Office of Planning and Engineering to take final action upon an Application within the time specified above shall be deemed to be approval of said Application and shall authorize the applicant to proceed in accordance with the plans filed unless such time is extended by agreement between the applicant and the Office of Planning and Engineering.

5.6 Inspections

The Office of Planning and Engineering shall inspect the work and either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved plan. Any portion of the work which does not comply shall be promptly corrected by the applicant or the applicant will be subject to the performance guarantee provisions of Section XI or the penalty provisions of Section XII. The Town may conduct random inspections to ensure effective control of erosion and sedimentation during all phases of construction.

5.7 Right-of-Entry for Inspection

When any new drainage control facility is installed on private property, or when any new connection is made between private property and a municipal drainage system, the filing of a stormwater management permit application shall be deemed as the property owner's permission to the Milford Office of Planning and Engineering or its agent or designee for the right to enter the property at reasonable times and in a reasonable manner for the purpose of the inspection. This includes the right to enter a property when it has a reasonable basis to believe that a

violation of this By-Law is occurring or has occurred, and to enter when necessary during emergencies, for abatement of a public nuisance or correction of a violation of this By-Law.

5.8 Application Review and Inspection Fees

The fee for review and inspection of any land development application shall be based on the amount of land to be disturbed at the site and the fee structure established by the Milford Board of Selectmen. All of the monetary contributions shall be credited to the Stormwater Revolving Fund, and shall be made prior to issuance of any building permit for development.

5.9 Permit Duration

Permits issued under this By-Law shall be valid from the date of issuance through the date the Milford Office of Planning and Engineering notifies the permit-holder that all stormwater management practices have passed the final inspection required under permit conditions.

SECTION VI. THE STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL PLAN

6.1 Contents of the Stormwater Management and Erosion and Sediment Control Plan

The application for a stormwater management permit shall consist of submittal of a Stormwater Management and Erosion and Sediment Control Plan (Plan), prepared by a professional engineer licensed by the Commonwealth of Massachusetts, which meets the design requirements provided by this By-Law. The Plan shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The Plan must be designed to meet the Massachusetts Stormwater Management Standards as set forth in Section VII of this By-Law and the MADEP's Stormwater Mangement Handbook Volumes I and II.

SECTION VII. STORMWATER MANAGEMENT PERFORMANCE STANDARDS

7.1 Minimum Control Requirements

Projects must meet the Stormwater Management Standards of the Massachusetts Stormwater Management Policy.

The Office of Planning and Engineering may waive the requirement that post-development peak discharge rates not exceed pre-development peak discharge rates, in developed urban areas, upon approval of an evaluation of available capacity in the Town's stormwater system, prepared by a Massachusetts registered professional engineer. When the proposed discharge may have an impact upon a sensitive receptor, including streams, and/or storm sewers, the Office of Planning and Engineering may require more stringent controls, based on existing capacity.

7.2 Stormwater Management Measures

7.2.1 Stormwater management measures shall be required to satisfy the minimum control requirements and shall be implemented in the following order of preference:

a. Infiltration, flow attenuation, and pollutant removal of runoff on-site to existing areas with grass, trees, and similar vegetation and through the use of open vegetated swales and natural depressions;
b. Stormwater detention structures for the temporary storage of runoff which is designed so as not to create a permanent pool of water; and
c. Stormwater retention structures for the permanent storage of runoff by means of a permanent pool of water.

7.2.2 Infiltration practices shall be utilized to reduce runoff volume increases. A combination of successive practices may be used to achieve the applicable minimum control requirements. Justification shall be provided by the applicant for BMP selection based on site conditions.

7.2.3 Best Management Practices shall be employed to minimize pollutants in stormwater runoff.

7.2.4 All stormwater management facilities shall be designed to provide an emergency overflow system, and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.

7.2.5 The designed release rate of any stormwater structure shall be modified if any increase in flooding or stream channel erosion would result at any downstream point.

SECTION VIII. DESIGN REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL PLAN

Projects must meet the erosion and sediment control provisions of the Massachusetts Stormwater Management Policy.

SECTION IX. MAINTENANCE

9.1 Operation, Maintenance and Inspection Schedule for Privately-Owned Facilities

9.1.1 Prior to issuance of any building permit for which stormwater management is required, the Office of Planning and Engineering shall require the applicant or owner to execute an operation, maintenance and inspection schedule (schedule) binding on all subsequent owners of land served by the private stormwater management facility. The schedule shall be designed to ensure that water quality standards are met in all seasons and throughout the life of the system. Such schedule shall provide for access to the facility at reasonable times for regular inspections by the Town or its authorized representative and for regular or special assessments of property owners to ensure that the facility is maintained in proper working condition to meet design standards and any provision established. The schedule shall include:

(1) The name(s) of the owner(s) for all components of the system.
(2) The names and addresses of the person(s) responsible for operation, maintenance, and regular inspections.
(3) The names and addresses of the person(s) responsible for financing maintenance and emergency repairs.
(4) An inspection and maintenance schedule for all drainage structures, including swales and ponds.
(5) The signature(s) of the owner(s).
(6) A list of easements with the purpose of each and a plan showing the location of each.
(7) Stormwater management easements as necessary for:
    (a) Access for facility inspections and maintenance.
    (b) Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event.
    (c) Direct maintenance access by heavy equipment to structures requiring regular cleanout.
(8) Stormwater management easement requirements:
    (a) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
    (b) Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Town.
    (c) Easements shall be recorded with the Registry of Deeds prior to issuance of a Certificate of Completion.
(9) Changes to Operation and Maintenance Plans
    (a) The owner(s) of the stormwater management system must notify the Office of Planning and Engineering of changes in ownership or assignment of financial responsibility.
    (b) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this by-law by mutual agreement of the Office of Planning and Engineering and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties must include owner(s), persons with financial responsibility, and persons with operational responsibility.

9.1.2 The schedule shall also provide that, if after notice by the Town Engineer to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within thirty days, the Office of Planning and Engineering may perform all necessary work to place the facility in proper working condition. The owner(s) of the facility shall be assessed the cost of the work and any penalties.

9.2 Maintenance Responsibility

9.2.1 The owner of the property on which work has been done pursuant to this By-Law 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 sediment control measures, riprap and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.

9.2.2 A maintenance schedule shall be developed for the life of any stormwater management facility and shall state the maintenance to be completed, the time period for completion, and who shall be legally responsible to perform the maintenance. This maintenance schedule shall be printed on the stormwater management plan.

9.2.3 Records of installation and maintenance performed on stormwater management facilities shall be maintained with the maintenance schedule.

9.2.4 If failure to maintain BMPs results in the need for the Office of Planning and Engineering to perform all necessary work to place the facility in proper working condition, then the owner(s) of the facility shall be assessed the cost of the work and any penalties.

SECTION X. DISCHARGE PROHIBITIONS

10.1 Prohibition of Illegal Discharges

No person shall discharge or cause to be discharged into the municipally owned separate storm sewer 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 stormwater.

The commencement, conduct or continuance of any illegal discharge to the municipally owned separate storm sewer system is prohibited except those discharges described as follows:

10.1.1 Unpolluted discharges from water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, 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, dechlorinated swimming pool water, and fire fighting activities.

10.1.2 Discharges specified in writing by the Milford Office of Planning and Engineering as being necessary to protect public health and safety.

10.1.3 Dye testing with verbal notification to the Milford Office of Planning and Engineering 24 hours prior to the test.

10.1.4 Any non-stormwater 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.

10.2 Prohibition of Illicit Connections

10.2.1 The construction, use, maintenance or continued existence of illicit connections to the municipally owned separate storm sewer system is prohibited.

10.2.2 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.

10.2.3 A person is considered to be in violation of this By-Law if the person connects a pipeline conveying sewage into the municipally owned separate storm sewer system, or allows such a connection to continue.

10.2.4 Upon written notification by the Town of Milford, a person who has an illicit connection to the municipally owned storm sewer shall at his own expense remove said illicit connection as soon as possible or be subject to penalties as specified in Section XII herein.

10.3 Waste Disposal Prohibitions

No person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, left, or maintained, in or upon any public or private property, driveway, parking area, street, alley, sidewalk, component of the storm drain system, or water of the U.S., any refuse, rubbish, garbage, litter, lawn/garden wastes or other discarded or abandoned objects, articles, and accumulations, so that the same may cause or contribute to pollution. Wastes deposited in proper waste receptacles for the purposes of collection are exempted from this prohibition.

SECTION XI. PERFORMANCE GUARANTEE

The Office of Planning and Engineering may require from the developer a cash escrow or other means of security acceptable to the Office of Planning and Engineering prior to the issuance of any building permit for the construction of a development requiring a stormwater management facility. The amount of the security shall not be less than the total estimated construction cost of the stormwater management facility. The guarantee so required in this section shall include provisions relative to forfeiture for failure to complete work specified in the approved stormwater management plan, compliance with all of the provisions of this By-Law and other applicable laws and regulations, and any time limitations. The guarantee shall not be fully released without a final inspection of the completed work by the Town Engineer, submission of "As-built" plans, and certification of completion by the Office of Planning and Engineering of the stormwater management facilities being in compliance with the approved plan and the provisions of this By-Law. When a performance guarantee is supplied by the applicant as part of a subdivision, the principal held by the Planning Board may be increased by the amount determined by the Office of Planning and Engineering instead of the Office of Planning and Engineering holding a separate performance guarantee, to avoid the double funding of projects and to avoid the added cost of carrying two performance guarantees. If the applicant chooses such a combined guarantee, the Planning Board shall not release or reduce the security without written approval of the Office of Planning and Engineering.

SECTION XII. ENFORCEMENT AND PENALTIES

12.1 Violations

Any activity that has commenced or is conducted contrary to this By-Law may be restrained by injunction or otherwise abated in a manner provided by law.

12.2 Notice of Violation

When the Milford Office of Planning and Engineering determines that an activity is not being carried out in accordance with the requirements of this By-Law, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

A. The name and address of the owner/applicant;
B. The address when available or the description of the building, structure, or land upon which the violation is occurring;
C. A statement specifying the nature of the violation;
D. A description of the remedial measures necessary to bring the activity into compliance with this By-Law and a time schedule for the completion of such remedial action;
E. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
F. A statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

12.3 Stop Work Orders

Persons receiving a notice of violation will be required to halt all construction activities, if applicable. This "stop work order" will be in effect until the Milford Office of Planning and Engineering confirms that the development activity is in compliance with this By-Law and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this By-Law.

12.4 Criminal and Civil Penalties

Any person who violates any provision of this by-law, regulations thereunder, or permits issued thereunder, shall be punished by a fine of not more than $300. Each day or portion thereof during which the violation continues shall constitute a separate offense, and each provision of the by-law, regulations, or permit violated, shall constitute a separate offense.

12.5 Restoration of Lands

Any person deemed to be a violator of this By-Law may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time

after notice, the Milford Office of Planning and Engineering may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

SECTION XIII. SEVERABILITY

The invalidity of any section or provision of this By-Law shall not invalidate any other section or provision thereof.

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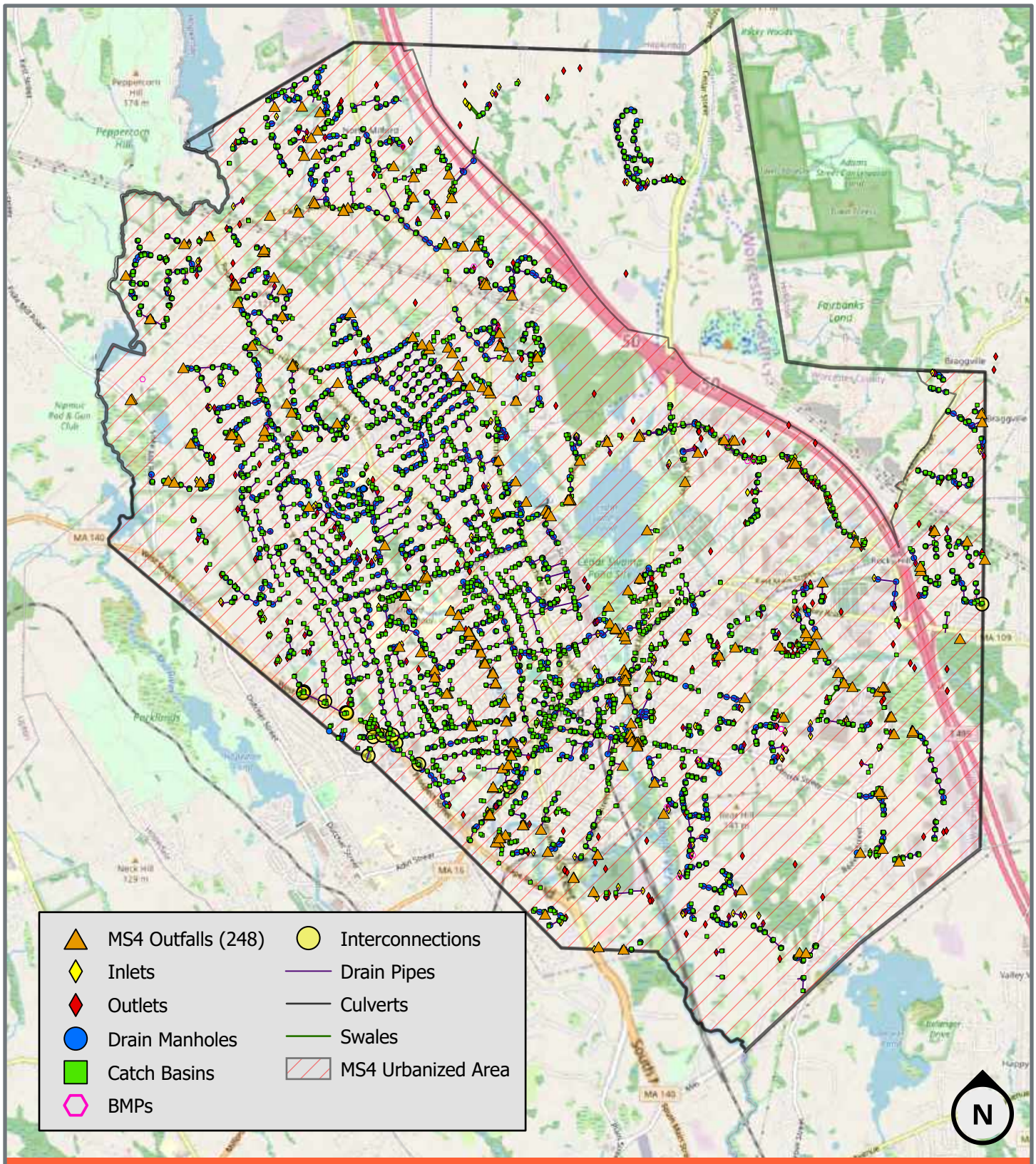
APPENDIX B

Storm System Mapping



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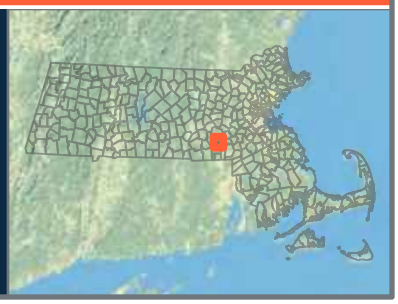
Appendix B
Stormwater System

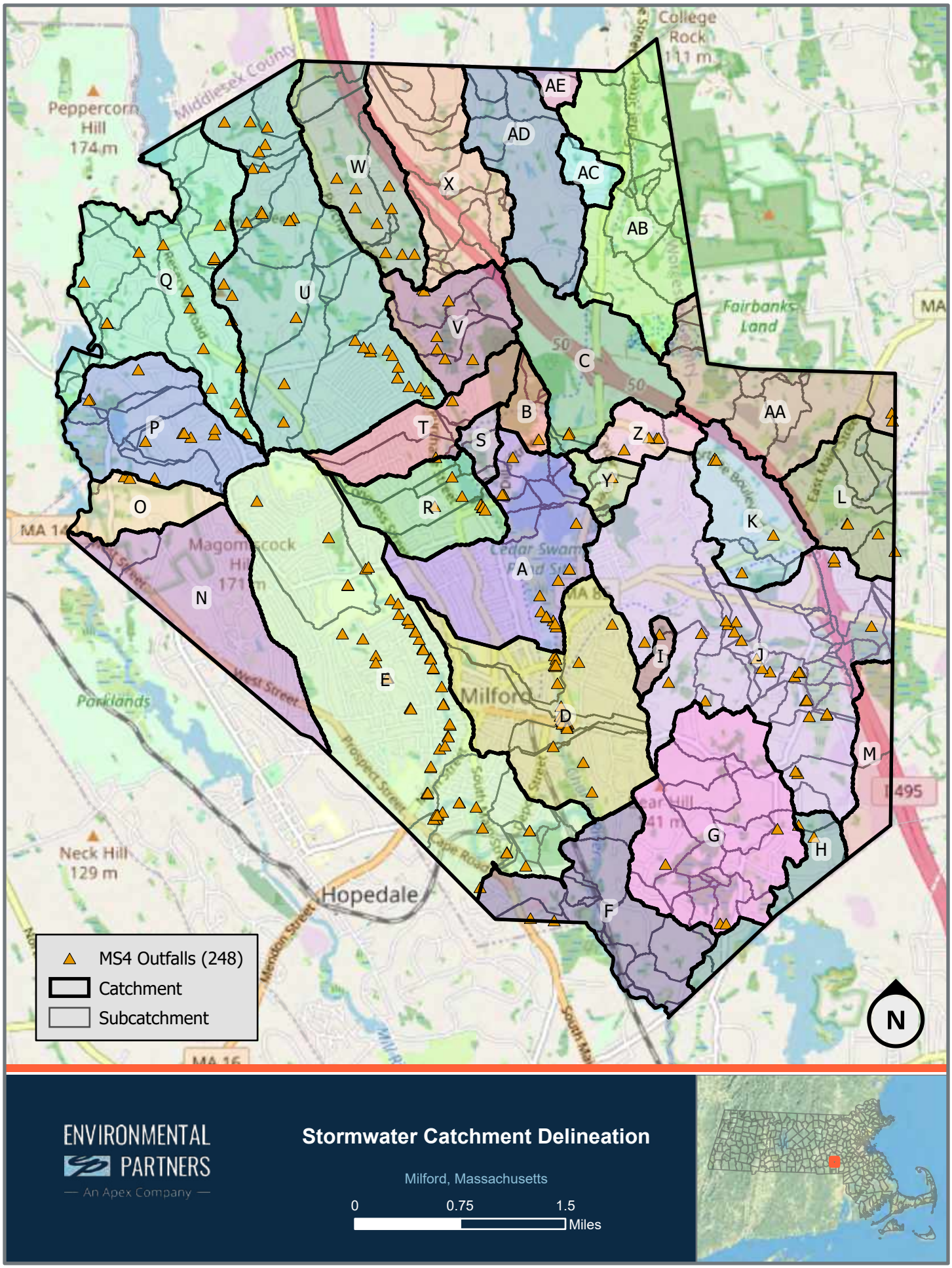
Milford, Massachusetts

0 0.5 1 Miles



APPENDIX C

Catchment Delineation Mapping and Ranking Matrix



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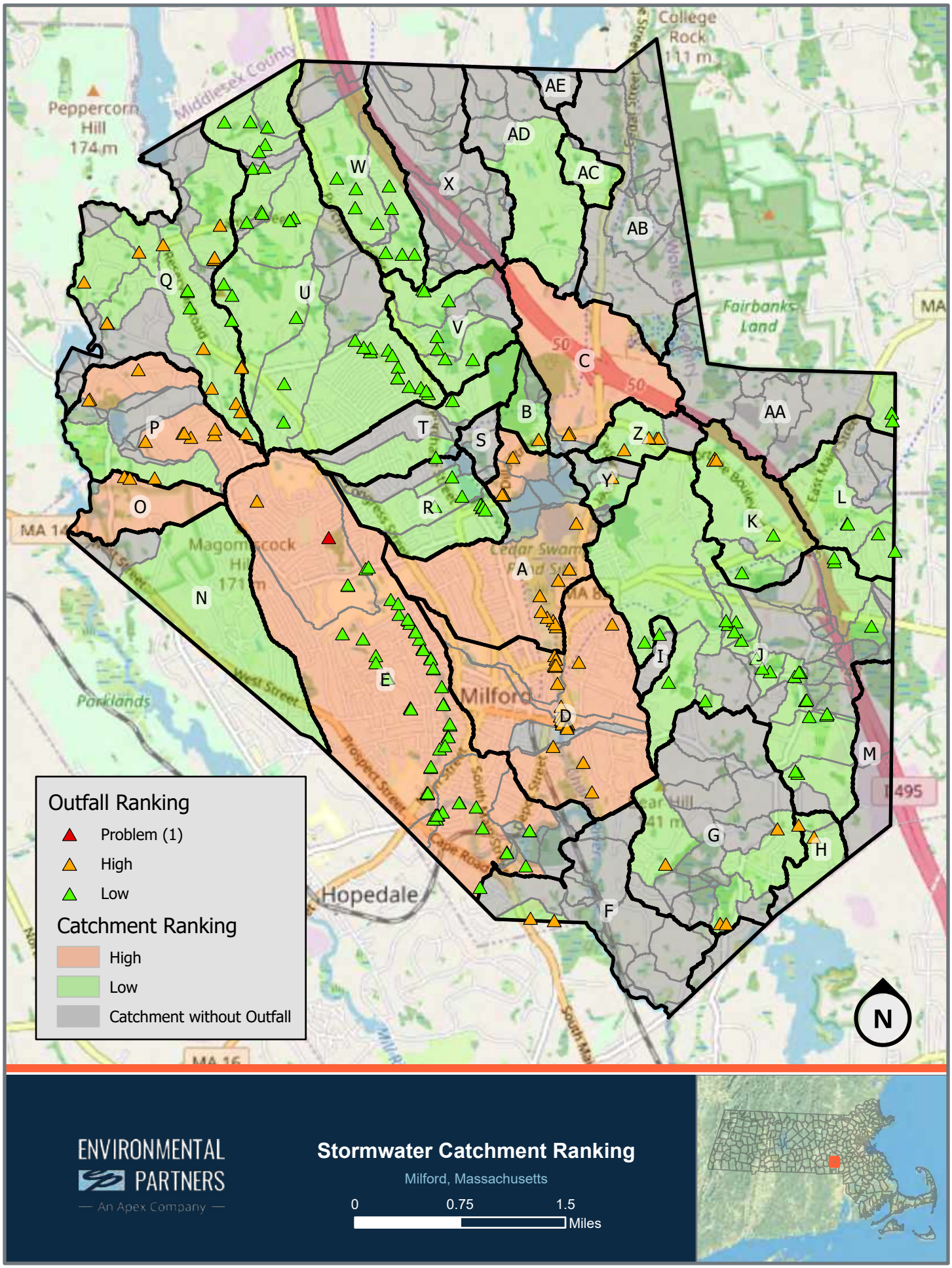
Stormwater Catchment Delineation

Milford, Massachusetts

0 0.75 1.5 Miles



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Stormwater Catchment Ranking

Milford, Massachusetts

0 0.75 1.5 Miles

Milford Outfall/Interconnection Ranking Table
September 2021

Catchment ID	Subcatchment ID	Receiving Water or MS4	Outfall ID	Catchment Scores: Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Septic?	Aging Septic?	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Outfall Scores: Receiving Water Quality	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Discharging to Area of Concern to Public Health? (Outfall)	Dry Weather Screening Results	Outfall Score	Catchment Score	Outfall Ranking*	Catchment Ranking**
Information Source				Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Septic Repair/ Replacement	GIS and Storm System Maps	GIS Maps, Town Input	Impaired Waters List	Outfall inspections and sample results	Town Input	GIS Maps, Town Input	Screening Status and Screening Date(s)				
Scoring Criteria				High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Category 4a = 2 Category 5 = 1 Others = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Yes = 2 No Data = 1 No = 0					
E	127	Unnamed Wetlands to Godfrey Brook	OF-504	1	2	0	0	2	1	0	2	1	0	7/27/21 - Dry	3	6	Problem	High
D	157	Charles River	314	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	236	Charles River	317	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	236	Charles River	318	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	236	Charles River	319	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	157	Charles River	320	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	157	Charles River	323	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	236	Charles River	327	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
D	236	Charles River	328	2	2	0	2	2	2	2	1	1	2	Not Screened	6	10	High	High
C	19	Charles River	1	1	2	0	2	0	2	2	0	1	2	5/2018, 7/25/2019 - Dry, Dry	5	7	High	High
C	19	Charles River	2	1	2	0	2	0	2	2	0	1	2	5/2018, 7/25/2019 - Dry, Sampled	5	7	High	High
Y	205	Unnamed Wetlands East of Cedar Swamp Pond	5	0	1	0	0	0	0	2	0	1	2	8/14/2019 - Dry	5	1	High	Low
A	121	Charles River	9	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
A	121	Charles River	15	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
A	25	Cedar Swamp Pond	22	1	2	0	0	2	2	2	0	1	2	5/2018 - Dry	5	7	High	High
A	121	Charles River	25	1	2	0	0	2	2	2	0	1	2	7/25/2019, 5/12/2021 - Dry, Sampled	5	7	High	High
A	121	Cedar Swamp Pond	26	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
D	157	Charles River	31	2	2	0	2	2	2	2	0	1	2	7/25/2019 - Dry	5	10	High	High
D	157	Charles River	33	2	2	0	2	2	2	2	0	1	2	7/25/2019 - Dry	5	10	High	High
A	121	Charles River	34	1	2	0	0	2	2	2	0	1	2	5/2018, 7/25/2019 - Dry, Dry	5	7	High	High
A	121	Charles River	35	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
A	121	Charles River	36	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
D	236	Charles River	37	2	2	0	2	2	2	2	0	1	2	6/3/2019 - Dry	5	10	High	High
D	236	Charles River	38	2	2	0	2	2	2	2	0	1	2	6/9/2020 - Dry	5	10	High	High
D	262	Charles River	39	2	2	0	2	2	2	2	0	1	2	6/9/2020 - Dry	5	10	High	High
D	262	Charles River	40	2	2	0	2	2	2	2	0	1	2	6/3/2019 - Sampled	5	10	High	High
D	236	Charles River	41	2	2	0	2	2	2	2	0	1	2	5/12/2021 - Dry	5	10	High	High
D	247	Charles River	42	2	2	0	2	2	2	2	0	1	2	6/3/2019 - Dry	5	10	High	High
F	110	Unnamed Tributary to Charles River	55	1	2	0	0	2	0	2	0	1	2	6/28/2021 - Dry	5	5	High	Low
A	56	Cedar Swamp Pond	182	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Sampled	5	7	High	High
A	56	Cedar Swamp Pond	183	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
A	56	Cedar Swamp Pond	304	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
A	121	Charles River and Cedar Swamp Pond	312	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Sampled	5	7	High	High
A	121	Cedar Swamp Pond	313	1	2	0	0	2	2	2	0	1	2	5/12/2021 - Dry	5	7	High	High
D	157	Charles River	315	2	2	0	2	2	2	2	0	1	2	3/25/2009 - Dry (GZA)	5	10	High	High
D	236	Charles River	316	2	2	0	2	2	2	2	0	1	2	2010 - Dry (GZA)	5	10	High	High
D	236	Charles River	321	2	2	0	2	2	2	2	0	1	2	5/2018 - Dry	5	10	High	High
D	236	Charles River	322	2	2	0	2	2	2	2	0	1	2	3/25/2009 - Dry (GZA)	5	10	High	High
D	94	Unnamed Wetlands East of Cedar Swamp Pond	1021	1	1	0	2	0	0	2	0	1	2	6/3/2019 - Dry	5	4	High	Low
D	94	Unnamed Wetlands East of Cedar Swamp Pond	1022	1	1	0	2	0	0	2	0	1	2	6/3/2019 - Dry	5	4	High	Low
D	166	Unnamed Tributary to Charles River	1027	2	1	0	2	0	0	2	0	1	2	6/3/2019 - Dry	5	5	High	Low
D	134	Charles River	1029	2	2	0	2	2	2	2	0	1	2	6/3/2019 - Sampled	5	10	High	High
D	56	Cedar Swamp Pond	1067	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
K	94	Unnamed Wetlands East of Cedar Swamp Pond	OF-15	1	1	0	2	0	0	2	0	1	2	6/3/2019 - Dry	5	4	High	Low
Q	183	Charles River	OF-162	0	1	0	2	0	2	2	0	1	2	6/9/2020 - Dry	5	5	High	Low
Z	54	Unnamed Wetlands East of Cedar Swamp Pond	OF-191	1	1	0	0	0	0	2	0	1	2	6/19/2020 - Dry	5	2	High	Low
D	134	Charles River	OF-307	0	1	0	2	0	0	2	0	1	2	6/28/2021 - Dry	5	3	High	Low
D	262	Unnamed Wetlands to Charles River	OF-361	0	1	0	2	0	0	2	0	1	2	6/28/2021 - Dry	5	3	High	Low
F	110	Unnamed Tributary to Charles River	OF-382	1	2	0	0	2	0	2	0	1	2	6/3/2019 - Dry	5	5	High	Low
Z	54	Unnamed Wetlands East of Cedar Swamp Pond	OF-387	1	1	0	0	0	0	2	0	1	2	6/3/2019 - Dry	5	2	High	Low
D	262	Unnamed Wetlands to Charles River	OF-510	0	1	0	2	0	0	2	0	1	2	7/27/21 - Dry	5	3	High	Low
A	121	Cedar Swamp Pond	OF-72	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
A	121	Cedar Swamp Pond	OF-73	1	2	0	0	2	2	2	0	1	2	7/25/2019 - Dry	5	7	High	High
B	24	Cedar Swamp Pond	OF-78	0	2	0	0	0	2	2	0	1	2	5/2018 - Dry	5	4	High	Low
Z	54	Unnamed Wetlands East of Cedar Swamp Pond	OF-80	1	1	0	0	0	0	2	0	1	2	6/3/2019 - Dry	5	2	High	Low

ENVIRONMENTAL PARTNERS
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Milford Outfall/Interconnection Ranking Table
September 2021

Catchment ID	Subcatchment ID	Receiving Water or MS4	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Septic?	Aging Septic?	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Receiving Water Quality	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Discharging to Area of Concern to Public Health? (Outfall)	Dry Weather Screening Results	Outfall Score	Catchment Score	Outfall Ranking*	Catchment Ranking**
Information Source				Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Septic Repair/ Replacement	GIS and Storm System Maps	GIS Maps, Town Input	Impaired Waters List	Outfall inspections and sample results	Town Input	GIS Maps, Town Input	Screening Status and Screening Date(s)				
Scoring Criteria				High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Category 4a = 2 Category 5 = 1 Others = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Yes = 2 No Data = 1 No = 0					
Z	54	Unnamed Wetlands East of Cedar Swamp Pond	OF-82	1	1	0	0	0	0	2	0	1	2	8/14/2019 - Dry	5	2	High	Low
H	146	Beaver Pond	271	0	1	0	0	0	2	2	0	1	0	5/2018 - Sampled	3	3	High	Low
D	100	Unnamed Wetlands North of Beaver Pond	1096	2	1	0	2	0	0	2	0	1	0	8/4/2021 - Dry	3	5	High	Low
E	127	Unnamed pond	OF-501	1	2	0	0	2	1	2	0	1	0	6/28/2021 - Dry	3	6	High	High
H	132	Unnamed Tributary to Beaver Pond	OF-508	0	1	0	0	0	2	2	0	1	0	6/28/21 - Dry	3	3	High	Low
G	144	Unnamed Tributary to Beaver Pond	OF-94	2	1	0	2	0	0	2	0	1	0	6/28/2021 - Dry	3	5	High	Low
G	100	Unnamed Wetlands North of Beaver Pond	OF-95	2	1	0	2	0	0	2	0	1	0	6/19/2020 - Dry	3	5	High	Low
P	74	Unnamed Wetlands to Little Field Pond	231	0	2	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	6	High	High
P	74	Unnamed Wetlands to Little Field Pond	232	0	2	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	6	High	High
P	74	Unnamed Wetlands to Little Field Pond	233	0	2	0	2	0	2	1	0	1	0	6/4/2019, 6/9/2020 - Dry, Dry	2	6	High	High
P	74	Unnamed Wetlands to Little Field Pond	237	0	2	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	6	High	High
O	120	Unnamed Wetlands to Little Field Pond	239	0	2	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	6	High	High
D	254	Fiske Millpond	1002	0	1	0	2	0	2	1	0	1	0	5/2018 - Dry	2	5	High	Low
D	254	Fiske Millpond	1003	0	1	0	2	0	2	1	0	1	0	5/2018 - Sampled	2	5	High	Low
D	59	Unnamed Wetlands to Little Field Pond	1037	0	1	0	2	0	2	1	0	1	0	5/2018 - Sampled	2	5	High	Low
D	198	Mill River	1048	0	1	0	2	0	2	1	0	1	0	6/4/2019 - Dry	2	5	High	Low
D	59	Unnamed Wetlands to Little Field Pond	1052	0	1	0	2	0	2	1	0	1	0	6/4/2019, 6/9/2020 - Dry, Dry	2	5	High	Low
D	74	Unnamed Wetlands to Little Field Pond	1066	0	2	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	6	High	High
D	198	Mill River	1085	0	1	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	5	High	Low
D	231	Unnamed Wetlands to Little Field Pond	1135	0	1	0	2	0	0	1	0	1	0	6/28/2021 - Dry	2	3	High	Low
D	59	Unnamed Wetlands to Little Field Pond	1136	0	1	0	2	0	2	1	0	1	0	6/19/2020 - Dry	2	5	High	Low
Q	59	Mill River	OF-110	0	1	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	5	High	Low
Q	90	Mill River	OF-163	0	1	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	5	High	Low
Q	59	Unnamed Wetlands to Little Field Pond	OF-199B	0	1	0	2	0	2	1	0	1	0	5/12/2021 - Dry	2	5	High	Low
Q	59	Unnamed Wetlands to Little Field Pond	OF-2	0	1	0	2	0	2	1	0	1	0	6/4/2019 - Dry	2	5	High	Low
P	74	Unnamed Wetlands to Little Field Pond	OF-200	0	2	0	2	0	2	1	0	1	0	5/2018 - Sampled	2	6	High	High
Q	297	Mill River	OF-217	0	1	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	5	High	Low
E	1	Fiske Millpond	OF-227	1	2	0	0	2	1	1	0	1	0	5/2018 - Sampled	2	6	High	High
D	59	Unnamed Wetlands to Little Field Pond	OF-229	0	1	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	5	High	Low
N	120	Unnamed Wetlands to Little Field Pond	OF-238	0	2	0	2	0	2	1	0	1	0	6/9/2020 - Dry	2	6	High	High
Q	38	Mill River	OF-365	0	1	0	2	0	2	1	0	1	0	6/4/2019 - Sampled	2	5	High	Low
Q	59	Unnamed Wetlands to Little Field Pond	OF-391	0	1	0	2	0	2	1	0	1	0	5/2018, 6/9/2020 - Dry, Dry	2	5	High	Low
P	1	Unnamed Tributary To Mill River	OF-505	0	2	0	2	0	2	1	0	1	0	7/27/21 - Dry	2	6	High	High
R	76	Louisa Lake	17	0	2	0	0	0	2	0	0	1	0	5/2018 - Sampled	1	4	Low	Low
R	76	Louisa Lake	18	0	2	0	0	0	2	0	0	1	0	7/25/2019 - Dry	1	4	Low	Low
R	76	Louisa Lake	23	0	2	0	0	0	2	0	0	1	0	5/2018, 7/25/2019 - Sampled, Dry	1	4	Low	Low
R	76	Louisa Lake	24	0	2	0	0	0	2	0	0	1	0	7/25/2019 - Dry	1	4	Low	Low
E	234	Godfrey Brook	61	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	111	Godfrey Brook	75	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	111	Godfrey Brook	77	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	135	Godfrey Brook	78	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	111	Godfrey Brook	86	1	2	0	0	2	1	0	0	1	0	6/19/2020 - Dry	1	6	Low	High
E	111	Godfrey Brook	87	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	111	Godfrey Brook	89	1	2	0	0	2	1	0	0	1	0	6/28/2021 - Dry	1	6	Low	High
E	111	Godfrey Brook	92	1	2	0	0	2	1	0	0	1	0	6/3/2019 - Dry	1	6	Low	High
E	106	Godfrey Brook	93	1	2	0	0	2	1	0	0	1	0	6/3/2019 - Dry	1	6	Low	High
E	106	Godfrey Brook	94	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	102	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	234	Godfrey Brook	105	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	108	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	112	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	116	1	2	0	0	2	1	0	0	1	0	6/4/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	118	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	120	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	124	1	2	0	0	2	1	0	0	1	0	6/4/2019 - Sampled	1	6	Low	High
E	234	Godfrey Brook	125	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
E	234	Godfrey Brook	126	1	2	0	0	2	1	0	0	1	0	3/7/2017 - Dry	1	6	Low	High

ENVIRONMENTAL PARTNERS
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Milford Outfall/Interconnection Ranking Table
September 2021

Catchment ID	Subcatchment ID	Receiving Water or MS4	Outfall ID	Density of Generating Sites	Age of Development/ Infrastructure	Historic Combined Sewers or Septic?	Aging Septic?	Culverted Streams?	Discharging to Area of Concern to Public Health? (Catchment)	Receiving Water Quality	Previous Screening Results Indicate Likely Sewer Input?	Frequency of Past Discharge Complaints	Discharging to Area of Concern to Public Health? (Outfall)	Dry Weather Screening Results	Outfall Score	Catchment Score	Outfall Ranking*	Catchment Ranking**
Information Source				Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Septic Repair/ Replacement	GIS and Storm System Maps	GIS Maps, Town Input	Impaired Waters List	Outfall inspections and sample results	Town Input	GIS Maps, Town Input	Screening Status and Screening Date(s)				
Scoring Criteria				High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Category 4a = 2 Category 5 = 1 Others = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Yes = 2 No Data = 1 No = 0					
E	234	Godfrey Brook	127	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
R	224	Louisa Lake	145	0	2	0	0	0	2	0	0	1	0	5/2018 - Sampled	1	4	Low	Low
T	43	Louisa Lake	146	0	2	0	0	0	2	0	0	1	0	7/25/2019 - Sampled	1	4	Low	Low
T	275	Huckleberry Brook	149	0	2	0	0	0	2	0	0	1	0	6/4/2019 - Dry	1	4	Low	Low
U	216	Unnamed Tributary to Huckleberry Brook	158	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Dry	1	5	Low	Low
Q	59	Unnamed Tributary to Huckleberry Brook	160	0	1	0	2	0	2	0	0	1	0	6/4/2019 - Dry	1	5	Low	Low
E	234	Godfrey Brook	244	1	2	0	0	2	1	0	0	1	0	3/8/2017 - Dry	1	6	Low	High
E	234	Godfrey Brook	245	1	2	0	0	2	1	0	0	1	0	3/8/2017 - Dry	1	6	Low	High
E	234	Godfrey Brook	246	1	2	0	0	2	1	0	0	1	0	3/8/2017 - Dry	1	6	Low	High
E	234	Godfrey Brook	247	1	2	0	0	2	1	0	0	1	0	5/2018 - Dry	1	6	Low	High
J	267	Unnamed Wetlands to Stall Brook	258	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
J	117	Unnamed Wetlands to Stall Brook	262	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
J	119	Unnamed Wetlands to Stall Brook	264	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
J	129	Unnamed Wetlands to Stall Brook	268	1	2	0	0	0	1	0	0	1	0	6/19/2020 - Dry	1	4	Low	Low
J	129	Unnamed Wetlands to Stall Brook	269	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
J	119	Unnamed Wetlands to Stall Brook	273	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
J	49	Unnamed Wetlands East of Stall Brook	285	1	2	0	0	0	1	0	0	1	0	6/28/2021 - Dry	1	4	Low	Low
J	49	Unnamed Wetlands East of Stall Brook	286	1	2	0	0	0	1	0	0	1	0	6/28/2021 - Dry	1	4	Low	Low
E	234	Godfrey Brook	291	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	234	Godfrey Brook	292	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
R	76	Louisa Lake	305	0	2	0	0	0	2	0	0	1	0	5/2018 - Sampled	1	4	Low	Low
D	156	Unnamed Wetlands to Stall Brook	1005	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
D	241	Huckleberry Brook	1026	0	1	0	2	0	0	0	0	1	0	6/9/2020 - Dry	1	3	Low	Low
D	26	Huckleberry Brook	1039	0	1	0	2	0	0	0	0	1	0	5/12/2021 - Dry	1	3	Low	Low
D	235	Huckleberry Brook	1040	0	1	0	2	0	0	0	0	1	0	5/12/2021 - Sampled	1	3	Low	Low
D	287	Unnamed Tributary to Huckleberry Brook	1041	0	1	0	2	2	0	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
D	241	Huckleberry Brook	1044	0	1	0	2	0	0	0	0	1	0	5/2018 - Dry	1	3	Low	Low
D	287	Unnamed Tributary to Huckleberry Brook	1047	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
D	272	Huckleberry Brook	1053	0	1	0	2	0	0	0	0	1	0	5/12/2021 - Dry	1	3	Low	Low
D	264	Unnamed Wetlands to Stall Brook	1054	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
D	71	Stall Brook	1057	0	1	0	2	0	0	0	0	1	0	1/31/2017 - Dry	1	3	Low	Low
D	111	Godfrey Brook	1060	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
D	234	Godfrey Brook	1072	1	2	0	0	2	1	0	0	1	0	5/2018 - Sampled	1	6	Low	High
D	234	Godfrey Brook	1073	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
D	234	Godfrey Brook	1074	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
D	234	Godfrey Brook	1075	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
D	234	Godfrey Brook	1076	1	2	0	0	2	1	0	0	1	0	5/12/2021 - Dry	1	6	Low	High
D	234	Godfrey Brook	1077	0	1	0	2	0	0	0	0	1	0	7/27/21 - Dry	1	3	Low	Low
D	126	Unnamed Wetlands to Stall Brook	1093	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
D	145	Godfrey Brook	1095	1	2	0	0	2	1	0	0	1	0	8/14/2019 - Dry	1	6	Low	High
D	93	Unnamed Tributary to Huckleberry Brook	1097	0	1	0	2	2	0	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
D	26	Huckleberry Brook	1101	0	1	0	2	0	0	0	0	1	0	6/19/2020 - Dry	1	3	Low	Low
D	46	Unnamed Wetlands West of Hopping Brook	1106	0	1	0	2	0	0	0	0	1	0	6/28/2021 - Sampled	1	3	Low	Low
D	234	Godfrey Brook	1108	1	2	0	0	2	1	0	0	1	0	6/19/2020 - Dry	1	6	Low	High
D	234	Godfrey Brook	1109	1	2	0	0	2	1	0	0	1	0	6/19/2020 - Dry	1	6	Low	High
D	111	Godfrey Brook	1114	0	1	0	2	0	0	0	0	1	0	6/28/2021 - Dry	1	3	Low	Low
D	23	Unnamed Wetlands West of Hopping Brook	1132	0	1	0	2	0	0	0	0	1	0	6/28/2021 - Dry	1	3	Low	Low
D	23	Unnamed Wetlands West of Hopping Brook	1133	0	1	0	2	0	0	0	0	1	0	6/28/2021 - Dry	1	3	Low	Low
D	234	Godfrey Brook	1138	0	1	0	2	0	0	0	0	1	0	3/8/2017 - Dry	1	3	Low	Low
D	111	Godfrey Brook	1146	0	1	0	2	0	0	0	0	1	0	9/23/2009 - Dry	1	3	Low	Low
D	234	Godfrey Brook	1238	0	1	0	2	0	0	0	0	1	0	6/28/2021 - Dry	1	3	Low	Low
D	234	Godfrey Brook	1239	0	1	0	2	0	0	0	0	1	0	7/27/21 - Dry	1	3	Low	Low
Q	59	Unnamed Tributary to Huckleberry Brook	1151A	0	1	0	2	0	2	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
Q	59	Unnamed Tributary to Huckleberry Brook	1151B	0	1	0	2	0	2	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
E	127	Godfrey Brook	OF-101	1	2	0	0	2	1	0	0	1	0	2015 - Dry (GZA)	1	6	Low	High
E	127	Godfrey Brook	OF-102	1	2	0	0	2	1	0	0	1	0	9/2/2015 - Dry	1	6	Low	High

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Information Source				Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Septic Repair/ Replacement	GIS and Storm System Maps	GIS Maps, Town Input	Impaired Waters List	Outfall inspections and sample results	Town Input	GIS Maps, Town Input	Screening Status and Screening Date(s)				
Scoring Criteria				High = 2 Medium = 1 Low = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Older = 2 Medium = 1 Newer = 0	Yes = 2 No Data = 1 No = 0	Yes = 2 No Data = 1 No = 0	Category 4a = 2 Category 5 = 1 Others = 0	Yes = 2 No Data = 1 No = 0	Frequent = 2 Occasional = 1 None = 0	Yes = 2 No Data = 1 No = 0					
E	127	Godfrey Brook	OF-103	1	2	0	0	2	1	0	0	1	0	2015 - Dry (GZA)	1	6	Low	High
E	127	Godfrey Brook	OF-104	1	2	0	0	2	1	0	0	1	0	9/2/2015 - Dry	1	6	Low	High
U	93	Unnamed Tributary to Huckleberry Brook	OF-106	0	1	0	2	2	0	0	0	1	0	2015 - Dry (GZA)	1	5	Low	Low
E	234	Godfrey Brook	OF-112	1	2	0	0	2	1	0	0	1	0	2015 - Dry	1	6	Low	High
W	195	Huckleberry Brook	OF-114	0	1	0	2	0	0	0	0	1	0	6/9/2020 - Dry	1	3	Low	Low
U	216	Unnamed Tributary to Huckleberry Brook	OF-117	0	1	0	2	2	0	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
Q	59	Unnamed Tributary to Huckleberry Brook	OF-119	0	1	0	2	0	2	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
W	241	Huckleberry Brook	OF-122	0	1	0	2	0	0	0	0	1	0	5/2018 - Dry	1	3	Low	Low
V	291	Huckleberry Brook	OF-123	0	1	0	2	0	0	0	0	1	0	6/9/2020 - Sampled	1	3	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-124	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-125	0	1	0	2	2	0	0	0	1	0	5/2018 - Dry	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-126	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-127	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Dry	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-128	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Sampled	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-129	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Sampled	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-130	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Dry	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-131	0	1	0	2	2	0	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
R	32	Louisa Lake	OF-133	0	2	0	0	0	2	0	0	1	0	7/25/2019 - Dry	1	4	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-141	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Dry	1	5	Low	Low
U	93	Unnamed Tributary to Huckleberry Brook	OF-145	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Sampled	1	5	Low	Low
U	187	Unnamed Tributary to Huckleberry Brook	OF-148	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Sampled	1	5	Low	Low
V	287	Unnamed Tributary to Huckleberry Brook	OF-155	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-156	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-157	0	1	0	2	2	0	0	0	1	0	2018 - Sampled	1	5	Low	Low
W	195	Huckleberry Brook	OF-158	0	1	0	2	0	0	0	0	1	0	5/2018 - Sampled	1	3	Low	Low
J	274	Unnamed Wetlands to Stall Brook	OF-16	1	2	0	0	0	1	0	0	1	0	6/28/2021 - Dry	1	4	Low	Low
U	287	Unnamed Tributary to Huckleberry Brook	OF-164	0	1	0	2	2	0	0	0	1	0	6/9/2020 - Dry	1	5	Low	Low
Q	287	Unnamed Tributary to Huckleberry Brook	OF-166	0	1	0	2	2	0	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
U	216	Unnamed Tributary to Huckleberry Brook	OF-169	0	1	0	2	2	0	0	0	1	0	5/12/2021 - Dry	1	5	Low	Low
X	93	Unnamed Tributary to Huckleberry Brook	OF-170	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Sampled	1	5	Low	Low
W	241	Huckleberry Brook	OF-173	0	1	0	2	0	0	0	0	1	0	6/4/2019, 5/12/2021 - Dry, Dry	1	3	Low	Low
W	195	Huckleberry Brook	OF-176	0	1	0	2	0	0	0	0	1	0	8/4/2021 - Dry	1	3	Low	Low
U	3	Unnamed Tributary to Huckleberry Brook	OF-178	0	1	0	2	2	0	0	0	1	0	6/4/2019 - Sampled	1	5	Low	Low
U	3	Unnamed Tributary to Huckleberry Brook	OF-179	0	1	0	2	2	0	0	0	1	0	5/2018, 6/9/2020 - Dry, Dry	1	5	Low	Low
U	3	Unnamed Tributary to Huckleberry Brook	OF-180	0	1	0	2	2	0	0	0	1	0	5/2018, 6/9/2020 - Sampled, Sampled	1	5	Low	Low
U	39	Unnamed Wetlands West of Godfrey Brook	OF-183	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
V	235	Huckleberry Brook	OF-186	0	1	0	2	0	0	0	0	1	0	5/2018, 6/9/2020 - Sampled, Sampled	1	3	Low	Low
W	195	Huckleberry Brook	OF-193	0	1	0	2	0	0	0	0	1	0	5/12/2021 - Dry	1	3	Low	Low
U	39	Unnamed Wetlands to Little Field Pond	OF-201	0	1	0	2	2	0	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
L	46	Unnamed Wetlands West of Hopping Brook	OF-203	0	1	0	2	0	0	0	0	1	0	6/19/2020 - Dry	1	3	Low	Low
J	72	Unnamed Wetlands East of Stall Brook	OF-21	1	2	0	0	0	1	0	0	1	0	8/4/2021 - Dry	1	4	Low	Low
E	195	Huckleberry Brook	OF-211	1	2	0	0	2	1	0	0	1	0	5/2018 - Sampled	1	6	Low	High
E	234	Godfrey Brook	OF-226	1	2	0	0	2	1	0	0	1	0	6/28/2021 - Dry	1	6	Low	High
K	6	Unnamed Wetlands East of Stall Brook	OF-234	1	1	0	2	0	0	0	0	1	0	5/12/2021 - Dry	1	4	Low	Low
J	72	Unnamed Wetlands to Stall Brook	OF-25	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
E	234	Godfrey Brook	OF-250	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	234	Godfrey Brook	OF-253	1	2	0	0	2	1	0	0	1	0	5/2018 - Dry	1	6	Low	High
J	83	Unnamed Wetlands to Stall Brook	OF-27	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
E	234	Godfrey Brook	OF-270	1	2	0	0	2	1	0	0	1	0	7/27/21 - Dry	1	6	Low	High
I	84	Unnamed Wetlands to Stall Brook	OF-276	1	2	0	0	0	1	0	0	1	0	6/19/2020 - Dry	1	4	Low	Low
J	267	Unnamed Wetlands to Stall Brook	OF-277	1	2	0	0	0	1	0	0	1	0	10/13/2017 - Dry	1	4	Low	Low
J	274	Unnamed Wetlands to Stall Brook	OF-286	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
J	119	Unnamed Wetlands to Stall Brook	OF-292	1	2	0	0	0	1	0	0	1	0	6/4/2019, 5/12/2021 - Dry, Dry	1	4	Low	Low
J	57	Unnamed Wetlands to Stall Brook	OF-30	1	2	0	0	0	1	0	0	1	0	5/2018 - Dry	1	4	Low	Low
J	122	Unnamed Wetlands to Stall Brook	OF-31	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
E	234	Godfrey Brook	OF-315	1	2	0	0	2	1	0	0	1	0	8/4/2021 - Sampled	1	6	Low	High
E	234	Godfrey Brook	OF-316	1	2	0	0	2	1	0	0	1	0	8/4/21 - Dry	1	6	Low	High

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E	234	Godfrey Brook	OF-322	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	234	Godfrey Brook	OF-324	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
E	234	Godfrey Brook	OF-325	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
J	122	Unnamed Wetlands to Stall Brook	OF-34	1	2	0	0	0	1	0	0	1	0	6/3/2019 - Dry	1	4	Low	Low
E	252	Godfrey Brook	OF-341	1	2	0	0	2	1	0	0	1	0	5/12/2021 - Dry	1	6	Low	High
E	234	Godfrey Brook	OF-346	1	2	0	0	2	1	0	0	1	0	6/19/2020, 5/12/2021 - Dry, Dry	1	6	Low	High
E	135	Godfrey Brook	OF-348	1	2	0	0	2	1	0	0	1	0	6/3/2019 - Sampled	1	6	Low	High
Q	59	Unnamed Tributary to Huckleberry Brook	OF-362	0	1	0	2	0	2	0	0	1	0	5/2018 - Sampled	1	5	Low	Low
K	94	Unnamed Wetlands East of Stall Brook	OF-374	1	1	0	2	0	0	0	0	1	0	5/2018 - Sampled	1	4	Low	Low
E	234	Godfrey Brook	OF-375	1	2	0	0	2	1	0	0	1	0	2015 - Dry	1	6	Low	High
L	219	Unnamed Wetlands West of Hopping Brook	OF-38	0	1	0	2	0	0	0	0	1	0	6/3/2019 - Sampled	1	3	Low	Low
J	117	Unnamed Wetlands to Stall Brook	OF-394	1	2	0	0	0	1	0	0	1	0	6/28/2021 - Dry	1	4	Low	Low
J	273	Unnamed Wetlands to Stall Brook	OF-43	1	2	0	0	0	1	0	0	1	0	5/12/2021 - Dry	1	4	Low	Low
P	1	Unnamed Tributary To Mill River	OF-500	0	2	0	2	0	2	1	0	1	0	6/28/2021 - Dry	2	6	High	High
U	220	Unnamed Tributary to Huckleberry Brook	OF-502	0	1	0	2	2	0	0	0	1	0	6/28/2021 - Dry	1	5	Low	Low
U	220	Unnamed Tributary to Huckleberry Brook	OF-503	0	1	0	2	2	0	0	0	1	0	6/28/2021 - Sampled	1	5	Low	Low
E	234	Godfrey Brook	OF-506	1	2	0	0	2	1	0	0	1	0	7/27/21 - Dry	1	6	Low	High
J	274	Unnamed Wetlands to Stall Brook	OF-507	1	2	0	0	0	1	0	0	1	0	6/28/21 - Dry	1	4	Low	Low
L	219	Unnamed Wetlands to Stall Brook	OF-509	0	1	0	2	0	0	0	0	1	0	6/28/21 - Dry	1	3	Low	Low
J	264	Unnamed Wetlands to Stall Brook	OF-6	1	2	0	0	0	1	0	0	1	0	6/9/2020 - Dry	1	4	Low	Low
E	111	Godfrey Brook	OF-62	1	2	0	0	2	1	0	0	1	0	6/9/2020 - Dry	1	6	Low	High
V	291	Huckleberry Brook	OF-69	0	1	0	2	0	0	0	0	1	0	6/19/2020 - Dry	1	3	Low	Low
R	224	Louisa Lake	OF-97	0	2	0	0	0	2	0	0	1	0	6/19/2020 - Dry	1	4	Low	Low
N	108	Interconnection with MassDOT	I-1	1	1	0	2	0	0	N/A	0	N/A	N/A	6/28/2021 - Dry	0	4	Low	Low
J	60	Interconnection with Town of Medway	I-11	0	1	0	2	0	0	N/A	0	N/A	N/A	6/28/2021 - Dry	0	3	Low	Low
N	108	Interconnection with MassDOT	I-12	0	2	0	2	0	2	N/A	0	N/A	N/A	6/28/2021 - Dry	0	6	Low	High
N	108	Interconnection with MassDOT	I-13	0	2	0	2	0	2	N/A	0	N/A	N/A	6/28/2021 - Dry	0	6	Low	High
N	108	Interconnection with MassDOT	I-2	0	2	0	2	0	2	N/A	0	N/A	N/A	8/4/2021 - Sampled	0	6	Low	High
N	108	Interconnection with MassDOT	I-3	0	2	0	2	0	2	N/A	0	N/A	N/A	6/28/2021 - Dry	0	6	Low	High
N	108	Interconnection with MassDOT	I-4	0	2	0	2	0	2	N/A	0	N/A	N/A	6/28/2021 - Dry	0	6	Low	High
E	234	Interconnection with MassDOT	I-6	1	1	0	0	0	0	N/A	0	N/A	N/A	6/28/2021 - Dry	0	2	Low	Low
E	234	Interconnection with MassDOT	I-9	1	2	0	0	2	1	N/A	0	N/A	N/A	6/28/2021 - Dry	0	6	Low	High

*Outfall/Interconnection classification:

Problem outfall: Outfalls/interconnections with known or suspected contributions of illicit discharges are Problem Outfalls. This includes outfalls/interconnections with previous screening that indicates likely sewer input, including:

- 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.

High priority outfalls: Outfalls/interconnections that have not been classified as Problem Outfalls and that are:

- Discharging to a waterbody that has a Category 4 or 5 impairment,
- Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds, or
- Determined by the permittee as high priority based on the characteristics listed below or other available information.

Low priority outfalls: Outfalls/interconnections determined by the permittee as low priority based on previous screening results, frequency of past discharge complaints, and discharging to areas of public concern.

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; cross-country drainage alignments through undeveloped land.

**Catchment classification:

High priority catchments: These catchments have the highest amount of indicators for illicit discharge potential.

Low priority catchments: These catchments have the fewest amount of indicators for illicit discharge potential.

ENVIRONMENTAL PARTNERS
An Apex Company

APPENDIX D

Field Forms and Hyperlinks to Laboratories and Field Services Companies

Date: _____

Weather Observations: _____

Staff Onsite: _____

Photos: _____

Milford 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)

Field Screening Data:

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)

Additional comments/Sketch:

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

IDDE investigation Results

Appendix E - Summary of Outfall Sampling History
Milford, MA

				Field Test Results					Analytical Results						
Structure ID	Discharging Waterbody	Type of Sampling	Sample Date	DO (mg/L)	Specific Conductance (µS/cm) *Threshold: 2,000*	Salinity (ppt)	Temp. (˚C)	pH *Threshold: 6.5-8.0*	Ammonia as Nitrogen (mg/L) *Threshold: 0.5*	Chlorine, TRC (mg/L)	Fecal Coliform, MF (col/100ml)	Biological Oxygen Demand, BOD (mg/L)	E. coli (MPN/100 mL) *Threshold: 236*	Phosphorus, Total (mg/L)	Surfactants, MBAS (mg/L) *Threshold: 0.25*
2	Charles River	Dry Weather	7/26/2019	9.71	909	-	21.3	7.00	0.093	ND	-	ND	6.32	0.014	ND
OF-123	Huckleberry Brook	Dry Weather	6/10/2020	7.68	441.1	0.21	17.1	7.86	0.09	**0.12**	-	ND	1	0.328	0.05
1040	Huckleberry Brook	Dry Weather	5/20/2021	7.48	768	0.38	15.2	7.48	ND	0	220	ND	1.0	0.655	ND
1106	Unnamed Wetlands West of Hopping Brook	Dry Weather	6/28/2021	7.12	**2189**	1.12	18.8	7.12	ND	0	650	-	1.0	0.045	ND
25	Charles River	Dry Weather	6/28/2021	6.51	560	0.27	15.60	6.51	0.141	0	120	ND	6.32	0.055	ND
OF-503	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/28/2021	7.12	619	0.3	18.00	7.12	0.10	0	150	-	**547.5**	0.05	ND
		Wet Weather	7/9/2021	8.5	93	0.05	20.13	7.44	0.089	ND	16000	-	**7572.0**	0.102	0.05
I-2	N/A (Interconnection)	Dry Weather	8/4/2021	8.04	886	0.44	18.8	**8.04**	0.129	ND	150	ND	83.92	0.017	ND
OF-124	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/9/2018	11.54	808	0.4	7.6	7.33	0.15	-	-	-	3	ND	0.006
OF-126	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/9/2018	10.38	553.6	0.27	7.4	**6.31**	ND	-	-	-	<1	ND	0.004
OF-157	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/9/2018	18.55	740	0.36	8.4	6.95	0.39	-	-	-	12.0	ND	0.007
OF-156	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/9/2018	9.27	537	0.26	10	7.10	0.5	ND	-	-	21.0	ND	0.006
OF-362	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/9/2018	9.84	650.5	0.32	10.10	7.39	0.22	-	-	-	16	ND	0.012
OF-201	Unnamed Wetlands to Little Field Pond	Dry Weather	5/10/2018	8.34	387.8	0.19	9	7.09	0.33	-	-	-	**235**	0.13	ND
1037	Unnamed Wetlands to Little Field Pond	Dry Weather	5/10/2018	4.44	249.8	0.14	9.1	6.94	0.15	-	-	-	13.0	0.16	0.09
OF-200	Unnamed Wetlands to Little Field Pond	Dry Weather	5/10/2018	9.03	777	0.39	8.4	7.24	0.11	-	-	-	21.0	ND	ND
OF-183	Unnamed Wetlands West of Godfrey Brook	Dry Weather	5/10/2018	7.94	259.6	0.12	9.40	6.77	0.37	-	-	-	5	ND	ND
OF-119	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/10/2018	10.76	1121	0.56	7.80	7.03	0.20	-	-	-	10	ND	ND
OF-164	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/10/2018	8.09	478	0.23	9.10	**6.15**	0.18	-	-	-	1	ND	ND
OF-180	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/10/2018	11.33	533	0.26	6.7	6.68	0.11	-	-	-	<1	ND	ND
		Dry Weather	6/10/2020	7.43	407.8	0.2	13	7.43	ND	ND	-	ND	34.51	0.017	0.05
1002	Fiske Millpond	Dry Weather	5/10/2018	10.78	195	0.09	8.4	7.11	ND	-	-	-	3	ND	ND
OF-133	Louisa Lake	Dry Weather	5/22/2018	10.19	781	0.39	8.6	6.88	0.18	ND	-	-	11	0.14	0.014
1072	Godfrey Brook	Dry Weather	5/22/2018	10.14	802	0.4	9.4	6.67	ND	ND	-	-	3.0	ND	0.005
OF-211	Huckleberry Brook	Dry Weather	5/23/2018	8.46	1020	0.51	10.1	**6.44**	0.34	ND	-	-	61	0.12	0.023
OF-158	Huckleberry Brook	Dry Weather	5/23/2018	9.51	1142	0.57	8.7	**6.45**	ND	ND	-	-	<10	ND	0.013

Appendix E - Summary of Outfall Sampling History
Milford, MA

				Field Test Results					Analytical Results						
Structure ID	Discharging Waterbody	Type of Sampling	Sample Date	DO (mg/L)	Specific Conductance (µS/cm) *Threshold: 2,000*	Salinity (ppt)	Temp. (˚C)	pH *Threshold: 6.5-8.0*	Ammonia as Nitrogen (mg/L) *Threshold: 0.5*	Chlorine, TRC (mg/L)	Fecal Coliform, MF (col/100ml)	Biological Oxygen Demand, BOD (mg/L)	E. coli (MPN/100 mL) *Threshold: 236*	Phosphorus, Total (mg/L)	Surfactants, MBAS (mg/L) *Threshold: 0.25*
1047	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/23/2018	8.62	998	0.5	8.8	**6.34**	0.18	ND	-	-	<10	ND	0.007
OF-155	Unnamed Tributary to Huckleberry Brook	Dry Weather	5/23/2018	10.41	514	0.25	9.9	6.96	0.13	ND	-	-	6.0	ND	0.011
23	Louisa Lake	Dry Weather	5/23/2018	6.26	561	0.27	17	6.9	0.29	ND	-	-	31	ND	0.018
305	Louisa Lake	Dry Weather	5/23/2018	5.44	645	0.32	9.1	**6.36**	ND	ND	-	-	10	ND	0.021
145	Louisa Lake	Dry Weather	5/23/2018	10.3	623	0.31	10.6	7.44	ND	ND	-	-	24.0	ND	0.006
OF-186	Huckleberry Brook	Dry Weather	5/23/2018	7.08	826	0.41	8.10	**6.06**	0.11	ND		-	<1	ND	0.008
OF-315	Godfrey Brook	Dry Weather	5/31/2018	8.81	594	0.29	14.50	7.97	ND	ND	-	-	26	0.11	ND
		Dry Weather	8/4/2021	7.88	501	0.24	21.90	7.88	ND	0	-	ND	**1046.24**	0.036	ND
		Wet Weather	7/9/2021	7.01	182	0.09	20.49	7.27	0.193	ND	10000	10	**7972**	0.165	ND
17	Louisa Lake	Dry Weather	5/31/2018	9.8	1010	0.5	10.6	7.75	ND	ND	-	-	55	ND	0.18
OF-69	Huckleberry Brook	Dry Weather	5/31/2018	11.96	1540	0.78	10.2	7.55	ND	ND	-	-	24	ND	ND
OF-227	Fiske Millpond	Dry Weather	5/31/2018	10.71	383.4	0.18	10.4	7.84	0.16	ND	-	-	**152.0**	0.23	0.06
271	Beaver Pond	Dry Weather	5/31/2018	10.92	**3100**	1.63	10.6	7.69	ND	ND	-	-	<1	ND	0.05
OF-374	Unnamed Wetlands East of Stall Brook	Dry Weather	5/31/2018	9.92	1323	0.67	14.5	7.76	ND	ND	-	-	3	ND	ND
40	Charles River	Dry Weather	6/4/2019	11.83	7.248	0.35	4.8	7.61	0.117	ND	-	-	**770.1**	0.022	ND
		Wet Weather	7/9/2021	6.9	65	0.03	17.5	7.10	ND	ND	8900	8.6	**3698**	0.15	ND
OF-348	Godfrey Brook	Dry Weather	6/4/2019	12.25	445.6	0.22	5	7.72	0.081	ND	-	-	**488.4**	0.089	ND
1029	Charles River	Dry Weather	6/4/2019	105.1	702	0.34	6.1	7.22	0.148	ND	-	-	<1	ND	ND
OF-38	Unnamed Wetlands West of Hopping Brook	Dry Weather	6/4/2019	13.82	346.6	0.17	4.50	7.71	0.082	ND	-	-	<1	ND	ND
OF-145	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/5/2019	17.11	1123	0.56	4.60	7.2	0.13	ND	-	-	<1	0.04	ND
OF-148	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/5/2019	12.53	998	0.49	4.1	7.19	0.397	ND	-	-	<1	ND	ND
OF-170	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/5/2019	14.66	668.7	0.33	4.3	7.76	0.078	ND	-	-	2.02	0.055	ND
OF-178	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/5/2019	14.83	467.9	0.23	5.2	7.96	ND	ND	-	-	1.0	ND	ND
OF-365	Mill River	Dry Weather	6/5/2019	11.26	300	0.14	9.2	7.90	0.172	ND	-	-	<1	-	ND
124	Godfrey Brook	Dry Weather	6/5/2019	11.46	490.2	0.24	10.1	7.61	0.19	ND	-	-	4.1	0.015	ND
OF-128	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/5/2019	11.76	275	0.13	6.3	7.81	0.076	ND	-	-	<1	0.052	ND
OF-129	Unnamed Tributary to Huckleberry Brook	Dry Weather	6/5/2019	11.82	554.3	0.26	8.00	**8.02**	0.159	ND	-	-	5.16	0.058	ND

Appendix E - Summary of Outfall Sampling History
Milford, MA

				Field Test Results					Analytical Results						
Structure ID	Discharging Waterbody	Type of Sampling	Sample Date	DO (mg/L)	Specific Conductance (µS/cm) *Threshold: 2,000*	Salinity (ppt)	Temp. (˚C)	pH *Threshold: 6.5-8.0*	Ammonia as Nitrogen (mg/L) *Threshold: 0.5*	Chlorine, TRC (mg/L)	Fecal Coliform, MF (col/100ml)	Biological Oxygen Demand, BOD (mg/L)	E. coli (MPN/100 mL) *Threshold: 236*	Phosphorus, Total (mg/L)	Surfactants, MBAS (mg/L) *Threshold: 0.25*
312	Charles River and Cedar Swamp Pond	Dry Weather	7/26/2019	16.75	841	-	22.12	**8.27**	**0.67**	ND	-	ND	**65108**	0.27	ND
182	Cedar Swamp Pond	Dry Weather	7/26/2019	10.29	235	-	19.7	7.02	0.145	ND	-	ND	4.06	ND	ND
146	Louisa Lake	Dry Weather	7/26/2019	10.38	466	-	18.82	**6.33**	0.128	ND	-	ND	56.14	0.018	ND
OF-103	Godfrey Brook	Wet Weather	7/9/2021	7.35	87	0.05	19.7	6.42	0.122	ND	14000	-	**18172**	0.1	ND
OF-104	Godfrey Brook	Wet Weather	7/9/2021	7.48	76	0.04	20.18	6.68	ND	ND	1700	-	**980.39**	0.038	ND
OF-504	Godfrey Brook	Wet Weather	7/9/2021	3.42	163	0.08	20.26	**5.95**	0.387	ND	34000	13	**97688.0**	0.21	**0.3**
37	Charles River	Wet Weather	7/9/2021	7.04	259	0.14	20.10	**8.42**	**0.81**	ND	170000	20	**111230**	0.34	ND
39	Charles River	Wet Weather	7/9/2021	7.97	150	0.08	20.04	7.46	0.116	ND	3400	4	113.7	0.062	ND
31	Charles River	Wet Weather	7/9/2021	7.39	4	0	20.43	6.54	ND	ND	38000	6.7	**6131.4**	0.258	ND
OF-101	Godfrey Brook	Wet Weather	7/9/2021	8	9	0	19.37	6.64	ND	ND	37000	-	**52050.0**	0.096	ND
OF-102	Godfrey Brook	Wet Weather	7/9/2021	7.69	71	0.04	19.57	6.54	ND	ND	8900	-	**11110**	0.024	ND
OF-510	Charles River	Wet Weather	8/5/2021	6.57	142	0.07	19.4	6.94	0.133	ND	26000	2.3	**20288**	0.096	0.07
OF-238	Littlefield Pond	Wet Weather	8/5/2021	7.04	35.7	0.02	20.2	6.8	0.105	ND	6900	-	**1732.9**	0.096	0.07
239	Littlefield Pond	Wet Weather	8/5/2021	6.9	17	0.01	20	6.67	ND	ND	3100	-	**1553.1**	0.131	ND
102	Godfrey Brook	Wet Weather	8/5/2021	8.81	20.7	0.01	24.40	6.96	0.078	ND	7300	2.7	**6902**	0.087	0.06

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

Environmental Partners GROUP

A partnership for engineering solutions

Memorandum

Date 09/05/19

To Michael Dean, P.E. – Town Engineer
Scott J. Crisafulli, Highway Surveyor

From Marissa Carvalho, Project Scientist - EP

CC Robert Rafferty, P.E., Principal - EP
Natalie Pommersheim, Project Manager – EP

Subject Task 4 – IDDE Investigations

Agreement for Professional Engineering Services for MS4 General Permit Assistance

The following memorandum summarizes the 2019 outfall sampling program, outlined in Task 4 – IDDE Investigations of the Agreement for Professional Engineering Services for MS4 General Permit Assistance. The sampling program was authorized by the Town of Milford and was conducted by Environmental Partners Group, Inc. (EP) over the course of four (4) days from June through August 2019.

In accordance with the Permit, all 199 MS4 outfalls in Milford are required to be screened within the first three (3) years of the Permit, or by June 30, 2021. Under the FY18 contract, EP screened 32 of the total 199 MS4 outfalls. Under this task, EP screened 82 MS4 outfalls during dry weather.

OUTFALL SAMPLING

A total of 109 outfalls were selected for dry weather screening based on flow data from previous outfall inspections and proximity to Milford's impaired waterbodies. EP selected a group of 83 outfall locations to start, and 26 additional outfall locations for EP to screen in case some outfalls from the original list of 83 were inaccessible. On June 4th, June 5th, July 26th and August 15th EP field staff screened 82 of these 109 MS4 outfall locations, most from the original list of 83 and some from the 26 additional outfalls. The complete list of all outfalls to screen/sample is attached as *Table 1: Outfalls to Screen/Sample 2019* and the locations are shown in *Figure 1: Milford Outfall Sampling Locations.*

EP was able to screen a total of 82 outfalls throughout dry weather inspections. During the screening process, 16 of the 82 MS4 outfalls were found flowing. The other 66 locations had no flow at the time of the investigation. EP collected samples at these 16 outfalls and field screened for temperature, conductivity, salinity, dissolved oxygen and pH. Water samples for ammonia nitrogen, surfactants (MBAS), total residual chlorine and E.coli were sent to a certified laboratory, ESS Laboratory located in Cranston, Rhode Island. Additional sampling parameters were applied to outfalls discharging to waterbodies with

TMDL requirements, such as nitrogen, turbidity, fecal coliform, phosphorus and biological oxygen demand. Both field and analytical results are shown in *Table 2: Milford Dry Weather Outfall Sampling Results.*

INSPECTION UPDATES

Throughout the outfall screening process, EP updated the inspection data for each structure visited. This information includes a photograph, updated location, structure type, material, size, condition, flow condition, receiving waterbody and headwall type. As described in the scope of work, this was most important to verify the outfall's receiving waterbody and eliminate any improperly categorized outlets, inlets or culverts from the Town's MS4 outfall count.

EP did identify five (6) structures that were improperly categorized as outfalls, and should be eliminated from the Town's outfall count. These structures include several 4" PVC gutters, an outlet to a BMP and a box culvert. Therefore, there are 79 remaining outfalls to be screened by June 2021. A log of each structure's updated inspection data is included in *Table 3: Outfall Structure Log.*

In addition to the 82 screened outfall locations, EP visited 22 other outfall locations which will require a second visit in order to complete the screening process. EP was unable to screen these locations due to excess vegetation or an upstream manhole being located on a busy road (requiring a police detail). These locations should be revisited during the next phase of outfall screening. *Table 4* lists the 22 outfall locations to be revisited, and any action items for Town maintenance.

RESULTS AND RECOMMENDATIONS

Of the 16 outfalls that were sampled during dry weather, three (3) tested above method reporting limits for E.coli. The limit threshold for E.coli is 236 MPN/100 mL. These outfalls include OF-40 (770.1 MPN/100mL), OF-348 (488.44 MPN/100 mL) and OF-312 (68,108 MPN/100mL), which discharge to the Charles River, Godfrey Brook and Milford Pond respectively. The US-EPA has determined that if levels of E.coli exceed 236 MPN (most probable number) per 100 mL of water, a health risk to humans may exist and a recreational water quality advisory should be issued. One of these outfalls, OF-312, also tested above limit thresholds for ammonia nitrogen and total phosphorus. Sampling results are shown in *Table 2: Milford Dry Weather Outfall Sampling Results*.

As stated in the Permit, a Problem Outfall is defined as one with known or suspected contributions of illicit discharges based on previous screening results indicating likely sewer input. Likely sewer input is classified as: 1) olfactory or visual evidence of sewage, 2) 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 3) Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L and detectable levels of chlorine. If any outfalls are categorized as Problem Outfalls, they are to be reprioritized in the outfall ranking as part of the IDDE plan, and ranked at the top of the Problem Priority Outfalls category for investigation. Investigations of catchments associated with Problem Outfalls are to begin no later than two (2) years from the permit effective date.

Although none of the Town's outfalls qualify as a Problem Outfall, including those sampled under the FY18 scope, EP recommends that the Town reprioritize these three (3) outfalls at the top of the ranking for catchment investigations.

In order to comply with the Permit, EP recommends screening the remaining 79 outfall locations in Year 2 of the Permit. This would include the 22 outfalls that were visited under this task and need to be revisited

with a police detail or after overgrown vegetation has been cleared. This will ensure that all MS4 outfalls have been visited by June 2021, within the first three (3) years of the Permit.

Enclosures:

Figure 1 – Milford Outfall Sampling Locations

Table 1 – Outfalls to Screen and Sample 2019

Table 2 – Milford Dry Weather Outfall Sampling Results: June – August 2019

Table 3 – Outfall Structure Log

Table 4 – Outfalls to be Revisited

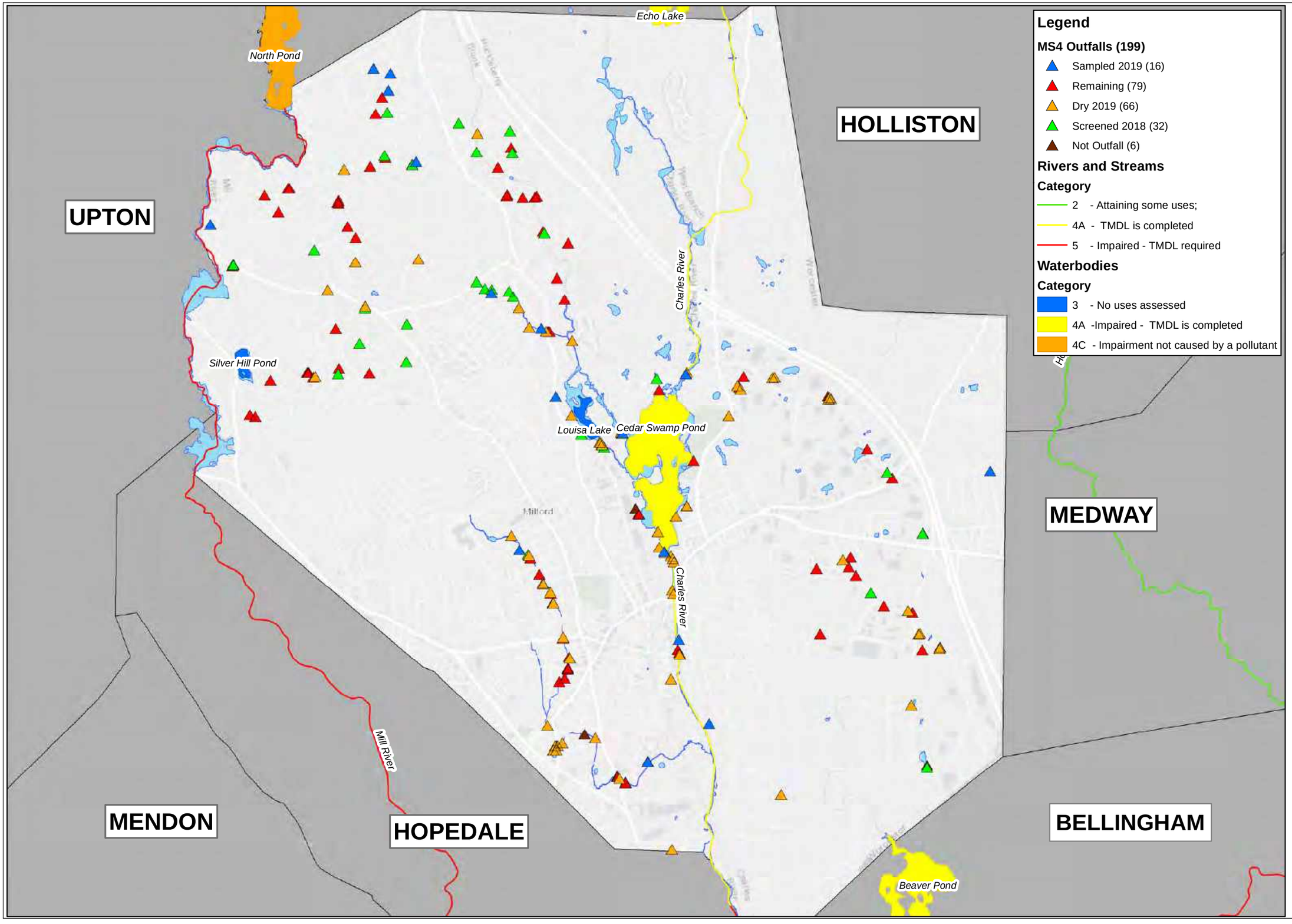

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Figure 1: Milford Outfall Sampling Locations
Town of Milford, MA
June - August 2019

1 in = 2,500 feet

0 0.5 1 2 Miles

Table 1: Outfalls to Screen/Sample

	Outfall_ID	Flow_Notes	MS4Outfalls	Receiving Water	Additional Sampling Parameters
1	31		Yes	Charles River	*Phosphorus; **Bacteria/pathogens
2	33		Yes	Charles River	
3	37	No	Yes	Charles River	
4	38		Yes	Charles River	
5	39	No	Yes	Charles River	
6	40		Yes	Charles River	
7	41		Yes	Charles River	
8	42		Yes	Charles River	
9	1029	No	Yes	Charles River	
10	OF-382	No	Yes	Charles River	
11	1001		Yes	Fiske Millpond	-
12	92	No	Yes	Godfrey Brook	*Phosphorus; **Bacteria/pathogens
13	93	No	Yes	Godfrey Brook	
14	116	Yes	Yes	Godfrey Brook	
15	124	Yes	Yes	Godfrey Brook	
16	OF-348	No	Yes	Godfrey Brook	
17	1026	Yes	Yes	Huckleberry Brook	*Phosphorus; **Bacteria/pathogens
18	OF-173	No	Yes	Huckleberry Brook	
19	18	No	Yes	Louisa Lake	*Phosphorus; **Bacteria/pathogens
20	24		Yes	Louisa Lake	
21	146	Yes	Yes	Louisa Lake	
22	OF-133	No	Yes	Louisa Lake	
23	9	No	Yes	Milford Pond	*Phosphorus; **Bacteria/pathogens; Dissolved Oxygen (BOD, and either Total Phos (freshwater) or Total Nitrogen (salt water)
24	15		Yes	Milford Pond	
25	25		Yes	Milford Pond	
26	26		Yes	Milford Pond	
27	27		Yes	Milford Pond	
28	30		Yes	Milford Pond	
29	35		Yes	Milford Pond	
30	36		Yes	Milford Pond	
31	302	No	Yes	Milford Pond	
32	312	No	Yes	Milford Pond	
33	313	No	Yes	Milford Pond	
34	OF-72	No	Yes	Milford Pond	
35	OF-73	No	Yes	Milford Pond	
36	3		Yes	Milford Pond	
37	OF-365	Yes	Yes	Mill River	-
38	OF-371	Unknown	Yes	Unnamed Pond East of Milford Pond (2)	*Phosphorus; **Bacteria/pathogens; Dissolved Oxygen (BOD, and either Total Phos (freshwater) or Total Nitrogen (salt water)
39	OF-82	No	Yes	Unnamed Pond East of Milford Pond (2)	
40	OF-83	Unknown	Yes	Unnamed Pond East of Milford Pond (2)	
41	1024		Yes	Unnamed Pond East of Milford Pond (2)	
42	OF-387	No	Yes	Unnamed Pond East of Milford Pond (2)	
43	OF-80	No	Yes	Unnamed Pond East of Milford Pond (2)	
44	OF-81		Yes	Unnamed Pond East of Milford Pond (2)	
45	158		Yes	Unnamed Pond North of Louisa Lake	*Phosphorus; **Bacteria/pathogens
46	1158		Yes	Unnamed Pond North of Louisa Lake	
47	160		Yes	Unnamed Stream East of Fiske Millpond (2)	-
48	253		Yes	Unnamed Stream East of Milford Pond	*Phosphorus; **Bacteria/pathogens; Dissolved Oxygen (BOD, and either Total Phos (freshwater) or Total Nitrogen (salt water)
49	1292		Yes	Unnamed Tributary to Beaver Pond	*Phosphorus; **Bacteria/pathogens
50	1027		Yes	Unnamed Tributary to Beaver Pond (2)	
51	OF-145	Yes	Yes	Unnamed Tributary to Huckleberry Brook (2)	*Phosphorus; **Bacteria/pathogens
52	OF-148	Yes	Yes	Unnamed Tributary to Huckleberry Brook (2)	
53	OF-170	Yes	Yes	Unnamed Tributary to Huckleberry Brook (2)	
54	OF-178	Yes	Yes	Unnamed Tributary to Huckleberry Brook (3)	
55	233	Yes	Yes	Unnamed Tributary to Huckleberry Brook (6)	
56	1052	No	Yes	Unnamed Tributary to Huckleberry Brook (6)	
57	OF-2	Yes	Yes	Unnamed Tributary to Huckleberry Brook (6)	
58	149		Yes	Unnamed Tributary to Louisa Lake	*Phosphorus; **Bacteria/pathogens
59	OF-127	No	Yes	Unnamed Tributary to Louisa Lake	
60	OF-128		Yes	Unnamed Tributary to Louisa Lake	
61	OF-129	No	Yes	Unnamed Tributary to Louisa Lake	
62	OF-130	No	Yes	Unnamed Tributary to Louisa Lake	
63	OF-131		Yes	Unnamed Tributary to Louisa Lake	
64	OF-141	No	Yes	Unnamed Tributary to Louisa Lake	
65	182	No	Yes	Unnamed Tributary to Milford Pond	*Phosphorus; **Bacteria/pathogens; Dissolved Oxygen (BOD, and either Total Phos (freshwater) or Total Nitrogen (salt water)
66	183	No	Yes	Unnamed Tributary to Milford Pond	
67	304	No	Yes	Unnamed Tributary to Milford Pond	
68	1067		Yes	Unnamed Tributary to Milford Pond	
69	5		Yes	Unnamed Tributary to Milford Pond	
70	264	No	Yes	Unnamed Tributary to Stall Brook	*Phosphorus; **Bacteria/pathogens
71	269	Yes	Yes	Unnamed Tributary to Stall Brook	
72	273	No	Yes	Unnamed Tributary to Stall Brook	
73	OF-25	No	Yes	Unnamed Tributary to Stall Brook	
74	OF-286	Yes	Yes	Unnamed Tributary to Stall Brook	
75	OF-292	No	Yes	Unnamed Tributary to Stall Brook	
76	OF-31	No	Yes	Unnamed Tributary to Stall Brook	
77	OF-34	No	Yes	Unnamed Tributary to Stall Brook	
78	1021	No	Yes	Unnamed Wetlands East of Milford Pond	*Phosphorus; **Bacteria/pathogens; Dissolved Oxygen (BOD, and either Total Phos (freshwater) or Total Nitrogen (salt water)
79	1022	No	Yes	Unnamed Wetlands East of Milford Pond	
80	OF-14		Yes	Unnamed Wetlands East of Milford Pond	
81	OF-15	No	Yes	Unnamed Wetlands East of Milford Pond	
82	1048	No	Yes	Unnamed Wetlands South of North Pond	-
83	OF-38	Yes	Yes	Unnamed Wetlands West of Hopping Brook	*Phosphorus; **Bacteria/pathogens

All outfalls sampled for:

Ammonia, Chlorine, E. coli, Surfactants

- = Only Ammonia, Chlorine, E.coli and Surfactants to be tested
* = Upper/Middle Charles River Watershed Phosphorus TMDL
** = Charles River Watershed Bacteria/Pathogen TMDL

	Additional Sampling Locations				
	Outfall_ID	Flow_Notes	MS4Outfalls	Receiving Water	Additional Sampling Parameters
1	1060	No	Yes	Godfrey Brook	*Phosphorus; **Bacteria/pathogens
2	87		Yes	Godfrey Brook	
3	88		Yes	Godfrey Brook	
4	94	No	Yes	Godfrey Brook	
5	75		Yes	Godfrey Brook	
6	76		Yes	Godfrey Brook	
7	77		Yes	Godfrey Brook	
8	61		Yes	Godfrey Brook	
9	105	No	Yes	Godfrey Brook	
10	108	No	Yes	Godfrey Brook	
11	112	No	Yes	Godfrey Brook	
12	118	No	Yes	Godfrey Brook	
13	120		Yes	Godfrey Brook	
14	125	No	Yes	Godfrey Brook	
15	127	No	Yes	Godfrey Brook	
16	291	No	Yes	Godfrey Brook	
17	292	No	Yes	Godfrey Brook	
18	70		Yes	Godfrey Brook	
19	72		Yes	Godfrey Brook	
20	73		Yes	Godfrey Brook	
21	74		Yes	Godfrey Brook	
22	71		Yes	Godfrey Brook	
23	1095		Yes	Godfrey Brook	
24	34	Yes	Yes	Milford Pond	*Phosphorus; **Bacteria/pathogens; Dissolved Oxygen (BOD, and either Total Phos (freshwater) or Total Nitrogen (salt water)
25	1	No	Yes	Milford Pond	
26	2	Yes	Yes	Milford Pond	

Table 2: Milford Dry Weather Outfall Sampling Results
June - August 2019

June 4, 2019

		Beach St	*Vernon St*	*Cedar St*	*Janock Rd*
		OF-40	**OF-348**	**OF-1029**	**OF-38**
Date Sampled		6/4/2019	6/4/2019	6/4/2019	6/4/2019
Time Sampled		9:20 AM	10:00 AM	11:10 AM	2:00 PM
Field Test Results	***Threshold***				
Temperature (°C)		4.8	5	6.1	4.5
Conductivity (µS/cm)	2000 (µS/cm)	7.2	445.6	701.8	346.6
Salinity (ppt)		0.35	0.22	0.34	0.17
Dissolved Oxygen (mg/L)		11.83	12.25	105.1	13.82
pH	<6.5, >8.0	7.61	7.72	7.22	7.71
Analytical Results					
Nitrogen, Ammonia (mg/L)	0.5 mg/L	0.1	0.1	0.148	0.08
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	ND	ND	ND
Phosphorus, Total (mg/L)	0.1 mg/L	0.022	0.089	ND	ND
Chlorine, Total (mg/L)	0.011/0.02 mg/L	ND	ND	ND	ND
E. Coli (MPN/100 mL)	236 MPN/100 mL	**770.1**	**488.44**	<1	<1

Notes:
NT: Not Tested
Bold Values exceed contaminant criteria.

*MA Department of Public Health Swimming Code
**US EPA Guidelines - Recreational Water Quality Advisory (235 CFU/100 mL)

Chlorine Levels
a. >0.011 mg/L - detectable level of HACH field kit
b. 0.2 - target for drinking water distribution

Table 2: Milford Dry Weather Outfall Sampling Results
June - August 2019

June 5, 2019

		Tanglewood Dr	*Brook Hollow Rd*	*Sunwood Dr*	*Esther Dr*	*Mill Pond Cir*	*Kellett Dr*	*Lucia Dr*	*Princess Pine Ln*
		OF-145	**OF-148**	**OF-170**	**OF-178**	**OF-365**	**124**	**OF-128**	**OF-129**
Date Sampled		6/5/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019
Time Sampled		3:09 PM	2:56 PM	2:36 PM	2:05 PM	12:55 PM	11:43 AM	10:17 AM	9:43 AM
Field Test Results	***Threshold***								
Temperature (°C)		4.6	4.1	4.3	5.2	9.2	10.1	6.3	8.0
Conductivity (µS/cm)	2000 (µS/cm)	1123.0	998.0	668.7	467.9	299.8	490.2	274.9	554.3
Salinity (ppt)		0.56	0.49	0.33	0.23	0.14	0.24	0.13	0.26
Dissolved Oxygen (mg/L)		17.11	12.53	14.66	14.83	11.26	11.46	11.76	11.82
pH	<6.5, >8.0	7.20	7.19	7.76	7.96	7.90	7.61	7.81	**8.02**
Analytical Results									
Nitrogen, Ammonia (mg/L)	0.5 mg/L	0.13	0.40	0.08	ND	0.17	0.19	0.08	0.16
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Phosphorus, Total (mg/L)	0.1 mg/L	0.040	ND	0.055	ND	-	0.015	0.052	0.058
Chlorine, Total (mg/L)	0.011/0.02 mg/L	ND	ND	ND	ND	ND	ND	ND	ND
E. Coli (MPN/100 mL)	236 MPN/100 mL	<1	<1	2	1	<1	4	<1	5

Notes:
NT: Not Tested
Bold Values exceed contaminant criteria.

*MA Department of Public Health Swimming Code
**US EPA Guidelines - Recreational Water Quality Advisory (235 CFU/100 mL)

Chlorine Levels
a. >0.011 mg/L - detectable level of HACH field kit
b. 0.2 - target for drinking water distribution

Table 2: Milford Dry Weather Outfall Sampling Results
June - August 2019

July 26, 2019

		Fino Field	*29 Dilla St*	*Reed St*	*65-67 Dilla St*
		OF-312	**OF-182**	**OF-146**	**OF-002**
Date Sampled		7/26/2019	7/27/2019	7/28/2019	7/29/2019
Time Sampled		10:15 AM	12:45 PM	1:17 PM	2:05 PM
Field Test Results	***Threshold***				
Temperature (°C)		22.1	19.7	18.8	21.3
Conductivity (µS/cm)	2000 (µS/cm)	841.0	235.0	466.0	909.0
Salinity (ppt)					
Dissolved Oxygen (mg/L)		16.75	10.29	10.38	9.71
pH	<6.5, >8.0	**8.27**	7.02	6.33	7.00
Analytical Results					
Nitrogen, Ammonia (mg/L)	0.5 mg/L	**0.67**	0.15	0.13	0.09
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	ND	ND	ND
Phosphorus, Total (mg/L)	0.1 mg/L	**0.270**	ND	0.018	0.014
Chlorine, Total (mg/L)	0.011/0.02 mg/L	ND	ND	ND	ND
E. Coli (MPN/100 mL)	236 MPN/100 mL	**65108**	4	56	6

Notes:
NT: Not Tested
Bold Values exceed contaminant criteria.

*MA Department of Public Health Swimming Code
**US EPA Guidelines - Recreational Water Quality Advisory (235 CFU/100 mL)

Chlorine Levels
a. >0.011 mg/L - detectable level of HACH field kit
b. 0.2 - target for drinking water distribution

Table 3: Outfall Structure Log
June - August 2019

Status	Outfall ID	Date	Time	Address	Structure Type	Structure Condition	Structure Material	Pipe Material	Pipe Diameter	Pipe Condition	Flow	Sediment	Submerged	Flow Notes	Inspection Notes	Headwall Material	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (µs/cm)	Salinity (ppt)	Connectivity Verified	Receiving Water Verified	Notes
Sampled	312	2019-07-26	10:09	Milford MA 01757 US				RCP	12		Yes			Sample taken from manhole	Apparent trash can in manhole; outfall was inaccessible behind fence		22.12	8.27	16.75	841		yes	yes	
Sampled	002	2019-07-26	13:56	65–67 Dilla St Milford MA 01757 US	Pipe	N/A		RCP	18	Poor	Yes	No	No	Low trickle	Soap bubbles	N/A	21.32	7	9.71	909		yes	yes	
Sampled	146	2019-07-26	13:12	116 Reed St Milford MA 01757 US	Headwall	Fair		RCP	24	Fair	Yes	No	No	Heavy flow		Stone	18.82	6.33	10.38	466		yes	yes	
Sampled	182	2019-07-26	12:50	29 Dilla St Milford MA 01757 US	Headwall	Good		RCP	12	Good	Yes				Sewer odor	Stone	19.7	7.02	10.29	235		yes	yes	
Sampled	OF-145	2019-06-05	15:09	38 Tanglewood Dr Milford MA 01757 US	Headwall	Fair		RCP	18	Good	Yes	No	<25%			Stone	4.6	7.2	17.11	1123	0.56	yes	yes	
Sampled	OF-148	2019-06-05	14:56	9 Brook Hollow Rd Milford MA 01757 US	Headwall	Good		CPP	12	Fair	Yes	<25%	~50%			Concrete	4.1	7.19	12.53	998	0.49	yes	yes	
Sampled	OF-170	2019-06-05	14:36	5 Sunwood Dr Milford MA 01757 US	Headwall	Good		RCP	12	Good	Yes	No	10%	Sampled from upstream MH	CB in front of 2 sun wood drive infiltrating groundwater through cracks in structure.	Stone	4.3	7.76	14.66	668.7	0.33	yes	yes	Sampled from upstream MH
Sampled	OF-178	2019-06-05	14:05	2 Esther Dr Milford MA 01757 US	Flared End Section	N/A		RCP		Good	Yes	No	No	Sampled from upstream CB		N/A	5.2	7.96	14.83	467.9	0.23	yes	yes	Sampled from upstream CB
Sampled	OF-365	2019-06-05	12:55	12 Mill Pond Cir Milford MA 01757 US	Headwall	Good		RCP	24”	Good	Yes	Yes	10%		Sampled from upstream MH	Concrete	9.2	7.9	11.26	299.8	0.14	yes	yes	
Sampled	124	2019-06-05	11:43	21 Kellett Dr Milford MA 01757 US	Pipe	N/A		RCP	18”	Good	Yes	No	No		Sampling from upstream CB	N/A	10.1	7.61	11.46	490.2	0.24	yes	yes	Sampled from upstream CB
Sampled	OF-128	2019-06-05	10:17	2 Lucia Dr Milford MA 01757 US	Pipe			ICP	15”	Good	Yes	Yes	20%		Sampled from upstream MH		6.3	7.81	11.76	274.9	0.13	no	yes	Sampled from upstream MH
Sampled	OF-129	2019-06-05	09:43	21 Princess Pine Ln Milford MA 01757 US	Pipe	N/A		RCP		Good	No	No	10%		Outfall dry. Sampled from upstream MH	N/A	8	8.02	11.82	554.3	0.26	yes	yes	Sampled from upstream MH.
Sampled	OF-38	2019-06-04	13:41	29 Janock Rd Milford MA 01757 US	Headwall	Good		RCP		Good	Yes	Yes	15%			Stone	4.5	7.71	13.82	346.6	0.17	yes	yes	
Sampled	1029	2019-06-04	11:00	14 S Cedar St Milford MA 01757 US	Headwall	Good		RCP		Good	No	No	No		Could not locate outfall, sampled from 4” PVC upstream CB in front of #92 East St.	Concrete	6.1	7.22	105.1	701.8	0.34	yes	yes	Sample collected from steady flow out of 4” pvc pipe into CB in front of #92 East St. Pipe may be coming from #21 South Central St.
Sampled	OF-348	2019-06-04	09:37	77–81 Vernon St Milford MA 01757 US	Headwall	Good		RCP	12”	Good	No	No	<25%	Upstream manhole opened, flowing		Concrete	5	7.72	12.25	445.6	0.22	yes	yes	Sampled from upstream MH
Sampled	040	2019-06-04	09:09	35 Beach St Milford MA 01757 US				RCP	36		Yes				Could not access, in brush behind fence		4.8	7.61	11.83	7.248	0.35	yes	no	Sampled upstream MH
Dry	005	2019-08-15	08:58	80–82 Cedar St Milford MA 01757 US	Pipe			RCP	12	Good	No	Unknown	20% submerged		Behind a fence							yes	yes	
Dry	1060	2019-08-15	13:08	24 Green St Milford MA 01757 US	Culvert	Unknown			0		No		Unknown	Observed from upstream catch basin, no flow. Standing water.	Unable to observe pipe end, no access to inside of culvert.							no	no	
Dry	1095	2019-08-15	13:05	19 Green St Milford MA 01757 US	Culvert wall	Good	Stone	CMP	12	Poor	No				Pipe in wall of culvert							yes	yes	
Dry	094	2019-08-15	13:02	33 Green St Milford MA 01757 US	Pipe			RCP	12	Good	No	80%	No		Catch basin connected to outfall has collapsed, requires immediate attention							yes	yes	
Dry	074	2019-08-15	12:29	110 S Main St Milford MA 01757 US	Pipe	Good	Stone/rip rap	CMP	10	Good	No	None	No		Corrugated metal pipe coming out of bottom of riprap hill into stream	None						yes	yes	
Dry	087	2019-08-15	12:17	43 Fruit St Milford MA 01757 US	Pipe	fair	VC	VC	18	Fair	No				Behind house							yes	yes	
Dry	061	2019-08-15	12:07	340 Main St Milford MA 01757 US				RCP	12	Fair	No	Unknown	Yes	No flow	Stormwater connects to stream through this catch basin, no flow.							yes	yes	
Dry	105	2019-08-15	11:49	9 Water St Milford MA 01757 US	Culvert	Fair	Cement/stone	RCP	24	Good	No	No	No		Headwall is culvert wall							yes	yes	
Dry	108	2019-08-15	11:44	21-23 West St Milford MA 01757 US	Culvert	Fair	Cement	RCP	12	Good	No	No	No		Goes to culverted stream from manhole in driveway							yes	yes	
Dry	112	2019-08-15	11:19	140 W Spruce St Milford MA 01757 US	Culvert	Fair	Cement	CMP	12	Fair	No	No	No		Outfall drops into culvert from catch basin							yes	yes	
Dry	118	2019-08-15	11:10	37 W Walnut St Milford MA 01757 US	Culvert	Fair	Stone	RCP	12	Good, rusty	No	No	No		Pipe under road in middle of culvert in stone wall							yes	yes	
Dry	120	2019-08-15	11:03	38 W Walnut St Milford MA 01757 US	Catch basin	Fair	Iron				No			Dry	Drop inlet	None						yes	yes	CB drops into culverted stream, no flow
Dry	125	2019-08-15	10:42	16 Hale Ave Milford MA 01757 US	Headwall	Fair	Stone	RCP	6”	Good	No	No	Yes, 60%	No, stagnant water	No sign of flow in stagnant water, submerged 60%	Stone						yes	yes	
Dry	127	2019-08-15	10:32	15 Packard Rd Milford MA 01757 US	Headwall	Fair	Concrete	RCP	10”	Good	No	No	No	No flow	Rock wedged in pipe	Concrete						yes	yes	
Dry	OF-82	2019-08-15	08:56	91 Cedar St Milford MA 01757 US	Flared End Section	N/A		RCP		Poor	No	No	No		Pipe disconnected, causing erosion							yes	yes	Pipe disconnected, requires maintenance
Dry	001	2019-07-26	13:51	68 Dilla St Milford MA 01757 US	Headwall	Fair	Other	Other	12		No		No	DRIPPING water, not enough to sample	Soap bubbles	Concrete						yes	yes	
Dry	OF-133	2019-07-26	13:37	115 Purchase St Milford MA 01757 US	Headwall	Good	Stone	CMP	18	Fair	No	Yes	No	No	Outfall covered in stones, clogged w sediment	Block						yes	yes	
Dry	1067	2019-07-26	12:57	26 Dilla St Milford MA 01757 US	Other	Good					No			Dry	Catch basin is the outfall in this situation							yes	yes	
Dry	304	2019-07-26	12:50	29 Dilla St Milford MA 01757 US	Headwall	Good		RCP	12	Good	No					Stone						yes	yes	
Dry	183	2019-07-26	12:33	27 Dilla St Milford MA 01757 US	Headwall	Good	RCP	RCP	12	Good	No	No	No	No	Access from 29 Dilla backyard	Stone						yes	yes	
Dry	018	2019-07-26	12:25	13 Dilla St Milford MA 01757 US	Headwall	Good	RCP	RCP	10	Good	No	No	No	None	On headwall	Concrete						yes	yes	
Dry	024	2019-07-26	12:19	8 Dilla St Milford MA 01757 US	Pipe	N/A		DI	8”	Good	No	No	20%			N/A						yes	yes	
Dry	023	2019-07-26	12:16	22–28 Dilla St Milford MA 01757 US	Pipe	N/A	Precast	RCP	48	Good	No	No	5%			N/A						yes	yes	
Dry	015	2019-07-26	10:59	Milford MA 01757 US	Flared end section	Good	Cement	RCP	15	Good	No	None	No									yes	yes	
Dry	026	2019-07-26	10:52	35 Granite St Milford MA 01757 US	Headwall	Good	Good	CMP	15	Good	No	No	No	Non	Clogged w leaves	Cement						yes	yes	
Dry	035	2019-07-26	09:35	33 Granite St Milford MA 01757 US	Pipe	Good	Stone	RCP	15	Good	No	50%	No	No	Private	Stone						yes	yes	
Dry	036	2019-07-26	09:30	33 Granite St Milford MA 01757 US	Pipe	Good	RCP	RCP	12	Good	No	10%	No	None	Private	No headwall						yes	yes	
Dry	034	2019-07-26	09:20	33 Granite St Milford MA 01757 US	Flared End Section	Good	Precast	RCP	24	Good	No	Yes; 5%	15%	Standing water	Standing water	Concrete						yes	yes	
Dry	031	2019-07-26	09:49	33 Granite St Milford MA 01757 US	Headwall	Good	Cement	RCP	24	Good	No	No	No			Cement						yes	yes	
Dry	033	2019-07-26	09:46	33 Granite St Milford MA 01757 US	Flared End	Poor	RCP	RCP	12	Poor	No	None	None	No	Thick brush							yes	yes	
Dry	OF-72	2019-07-26	09:07	29 Cedarview Cir Milford MA 01757 US	Headwall	Good		RCP	18”	Good	No	No	No			Concrete						yes	yes	

Table 3: Outfall Structure Log
June - August 2019

Status	Outfall ID	Date	Time	Address	Structure Type	Structure Condition	Structure Material	Pipe Material	Pipe Diameter	Pipe Condition	Flow	Sediment	Submerged	Flow Notes	Inspection Notes	Headwall Material	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (µs/cm)	Salinity (ppt)	Connectivity Verified	Receiving Water Verified	Notes
Dry	OF-73	2019-07-26	09:05	29 Cedarview Cir Milford MA 01757 US	Headwall	Good		RCP	12”	Good	No	No	No			Concrete						yes	yes	
Dry	009	2019-07-26	08:52	23 Columbus Ave Milford MA 01757 US	Headwall	Fair	RCP	RCP	12	Poor	No	100%	No		Buried	Block						yes	yes	Pipe damaged, pieces of broken pipe in area
Dry	1048	2019-06-05	13:59	45 Camp St Milford MA 01757 US	Flared End Section	N/A		RCP	12	Good	No	No	No			Concrete						yes	yes	
Dry	1052	2019-06-05	13:22	12 Whitewood Rd Milford MA 01757 US	Headwall	Good		RCP	12”	Good	No	Yes	50%	Upstream CBs checked. No flow.	Other orifice is a culvert	Concrete						yes	yes	
Dry	160	2019-06-05	13:17	4 Oak Ter Milford MA 01757 US	Pipe			RCP	12	Poor	No	Yes	No									yes	yes	
Dry	OF-2	2019-06-05	12:47	199 Highland St Milford MA 01757 US	Headwall	Good		RCP		Good	No	No	No	Wet weather		Other						yes	yes	
Dry	233	2019-06-05	12:39	4 Tallpine Rd Milford MA 01757 US	Headwall	Good		RCP	15	Good	No	No	No	Wet weather		Concrete						yes	yes	
Dry	116	2019-06-05	11:37	29 Pleasant St Milford MA 01757 US	Culvert	Good		VC	8”	Fair	Yes	No	No			Block						no	yes	Outfall disconnected from pipe. ArcMap needs updating.
Dry	OF-127	2019-06-05	10:07	20 Lucia Dr Milford MA 01757 US	Headwall	Good		RCP		Good	No	No	No			Stone						yes	yes	
Dry	OF-141	2019-06-05	09:21	20 Chapel St Milford MA 01757 US	Pipe	N/A		RCP		Good	No	Yes	No			N/A						yes	yes	
Dry	OF-130	2019-06-05	09:12	168 Purchase St Milford MA 01757 US	Headwall	Good	Stone	VC	12”	Fair	No	No	No		Pipe is cracked	Block						yes	yes	
Dry	149	2019-06-05	08:55	24–214 Shadowbrook Ln Milford MA 01757 US				AC	4		No				MH is not connected to CB and Outfall. It’s electric.							no	yes	MH is not connected to CB and Outfall. It’s electric.
Dry	OF-80	2019-06-04	15:02	200 Fortune Blvd Milford MA 01757 US	Headwall	Good		RCP		Good	No	No	No			Concrete						yes	yes	
Dry	OF-387	2019-06-04	15:01	230 Fortune Blvd Milford MA 01757 US	Headwall	Good	Concrete	RCP	12”	Good	No	No	No		From bed bath and beyond	Concrete						yes	yes	To drainage basin
Dry	1021	2019-06-04	14:49	345 Fortune Blvd Milford MA 01757 US	Headwall	Good		RCP		Good	No	No	No			Block						no	no	Unable to find outlet pipe, enters drainage swale
Dry	1022	2019-06-04	14:48	345 Fortune Blvd Milford MA 01757 US	Flared End Section	N/A		RCP		Good	No	50%	No			N/A						yes	no	No waters, enters drainage swale
Dry	OF-15	2019-06-04	14:47	345 Fortune Blvd Milford MA 01757 US	Flared End Section	N/A		RCP	36	Good	No	No	No			N/A						yes	no	No waters, drainage swale
Dry	1027	2019-06-04	13:29	13 Huff Rd Milford MA 01757 US	Headwall	Good		RCP		Good						Concrete						no	no	Structure appears to be drainage culvert outlet or overflow from basin. Opened upstream manhole to basin and observed no flow
Dry	269	2019-06-04	13:13	4 Mason Dr Milford MA 01757 US	Headwall	Good		CPP		Good	Yes	No	No			Concrete						yes	yes	Opened upstream manholes and found no flow, no sample
Dry	273	2019-06-04	12:45	2–22 Maple St Milford MA 01757 US	Culvert	Good		RCP	12	Good	No		60%			Concrete						yes	yes	Outfall from CB, both pipes partially submerged, no flow, no sample
Dry	264	2019-06-04	12:43	1–15 Maple St Milford MA 01757 US	Headwall	Good		RCP	12	Good	No		50%			Concrete						yes	yes	Outfall from CB both partially submerged, no flow, no sample
Dry	OF-31	2019-06-04	12:25	1–15 Maple St Milford MA 01757 US	Headwall	Good		RCP	12	Fair	No	Yea	100%			Concrete						yes	yes	Outfall pipe and CB inlet pipe completely submerged, no flow
Dry	OF-34	2019-06-04	12:25	2–22 Maple St Milford MA 01757 US	Headwall	Good		RCP	12	Fair	No	Yes	100%			Concrete						yes	yes	Outfall pipe and CB inlet pipe completely submerged, no flow
Dry	OF-286	2019-06-04	12:07	48–98 Birch St Milford MA 01757 US	Flared End Section	Good	Concrete	RCP	12”	Good	Yes	Yes	10%	Flow from culvert inlet across Street	Flow verified to be from culvert inlet across street. No sample collected.	N/A						no	yes	Structure is also a culvert outlet for unrecorded culvert inlet across street.. Culvert inlet across street providing flow out of culvert outlet.
Dry	OF-25	2019-06-04	12:02	12–14 Birch St Milford MA 01757 US	Pipe	N/A		CMP		Fair	No	Yes	100%		Pipe between CBs acts as a culvert under Road.	N/A						yes	yes	Stagnant water in both CBs, drainage network is essentially a culvert
Dry	OF-382	2019-06-04	10:24	8 Evans Rd Milford MA 01757 US	Flared End Section	N/A		RCP		Good	No	~50%	No		Significant sediment buildup in pipe	N/A						yes	yes	
Dry	093	2019-06-04	10:13	33 Green St Milford MA 01757 US	Flared End Section	N/A		RCP	12	Good	No	Yes	70%	No flow in upstream CB	Unable to visually inspect	N/A						yes	yes	
Dry	092	2019-06-04	10:06	24 Green St Milford MA 01757 US		Good		RCP	12	Poor	No	Yes	90%	No flow in upstream CB		Stone						yes	yes	
Dry	042	2019-06-04	09:26	2 River St Milford MA 01757 US	Outfall	Poor	Concrete	RCP	15	Unknown	No Flow	Unknown	Yes									yes	yes	
Dry	037	2019-06-04	08:20	214–216 Central St Milford MA 01757 US	Headwall	Good		CMP	12	Good	No	No	No	None	Outlet from BMP STRUCTURE	Stone						yes	yes	From drainage BMP see photos
Dry	OF-371	2019-08-15	08:55	91 Cedar St Milford MA 01757 US	Pipe	N/A		RCP		Good	Unknown	<25%	~50%		9-15-15							no	no	Unable to locate pipe end, possibly under water in pond?
Dry	025	2019-07-26	10:38	Milford MA 01757 US				RCP	0		No		NO									yes	yes	
Dry	158	2019-06-05	13:44	4 Village Cir Milford MA 01757 US				HDPE	36						MH in front of 7 Village Circle infiltrating ground water. No flow from upstream pipe.							yes	yes	Flow appears to be infiltrating groundwater at MH in front of #7 Village Circle
Dry	OF-173	2019-06-05	11:03	15 Windsor Rd Milford MA 01757 US	Culvert	Good		CMP		Fair	No	<25%	~50%		Drops into culvert	Stone						yes	yes	
Dry	OF-292	2019-06-05	11:04	2–22 Maple St Milford MA 01757 US	Headwall	Good		CMP		Fair	No		50%			Concrete						no	no	
Could not Locate	077	2019-08-15	12:45	125–135 Depot St Milford MA 01757 US				PVC	6						Not sure this is an OF. Not located in the field.							no	no	
Could not Locate	076	2019-08-15	12:46	110 S Main St Milford MA 01757 US				PVC	6						Not sure this is an outfall. Not located in field. Excessive vegetation.							no	no	
Could not Locate	075	2019-08-15	12:46	110 S Main St Milford MA 01757 US				PVC	6						Not sure this is an outfall. Not located in vegetation.							no	no	
Could not Locate	071	2019-08-15	12:55	110 S Main St Milford MA 01757 US				CMP	6													no	no	
Could not Locate	313	2019-08-15	08:55	68–74 Cedar St Milford MA 01757 US	Pipe	N/A		RCP		Good	No	Yes	50%		Pipe seems to be GPSd behind 4’ of vegetation, and over a chain linked fence, to edge of water. Unable to scale this fence covered in brush.	N/A						no	no	
Could not Locate	OF-83	2019-08-15	08:56	91 Cedar St Milford MA 01757 US	Flared End Section	N/A		RCP		Fair	Unknown	<25%	~50%			N/A						no	no	Pipe may be completely submerged, not able to visually confirm location.
Could not Locate	OF-131	2019-06-05	09:13	173 Purchase St Milford MA 01757 US	Pipe										Can’t locate, assumed							no	no	Unable to locate
Could not Locate	003	2019-06-04	15:21	38 Ramsdell St Milford MA 01757 US	Pipe			RCP	24						Inlet located with flow. Could not locate outfall.							no	no	Outfall not accessible. Need police detail to open MH.
Could not Locate	038	2019-06-04	08:50	222 Central St Milford MA 01757 US				RCP	12						Private							no	yes	Unable to access. No upstream structures located.
Could not Locate	041	2019-06-04	08:37	186 Central St Milford MA 01757 US				RCP	18						Could not locate, may not exist?							no	no	No outfalls or structures
Could not Locate	039	2019-06-04	08:38	30 Front St Milford MA 01757 US	Pipe	Fair		PVC	10	Fair	No											no	no	No outfall, CB in front of garage door filled with white milky liquid, unable to see invert in CB

Table 3: Outfall Structure Log
June - August 2019

Status	Outfall ID	Date	Time	Address	Structure Type	Structure Condition	Structure Material	Pipe Material	Pipe Diameter	Pipe Condition	Flow	Sediment	Submerged	Flow Notes	Inspection Notes	Headwall Material	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (µs/cm)	Salinity (ppt)	Connectivity Verified	Receiving Water Verified	Notes
To Be Revisited	292	2019-08-15	11:59	12 Water St Milford MA 01757 US				RCP	18	Good	No	No	No									no	no	
To Be Revisited	1026	2019-06-05	10:57	2 Julie Cir Milford MA 01757 US	Headwall	Poor		RCP		Good	Yes	Yes	No		Headwall fell over. Overflow outlet from retention pond.	Concrete						yes	yes	
To Be Revisited	291	2019-08-15	11:59	11 Water St Milford MA 01757 US				RCP	15	Good	No	No	No									no	no	
To Be Revisited	027	2019-08-15	15:31	Unknown	Pipe			RCP	18						Private							no	no	
To Be Revisited	302	2019-08-15	15:30	Unknown	Pipe			Other	0		No		NO		Private							no	no	
To Be Revisited	073	2019-08-15	12:37	110 S Main St Milford MA 01757 US				CMP	10						To be revisited in winter once vegetation is minimized							no	no	
To Be Revisited	070	2019-08-15	12:38	110 S Main St Milford MA 01757 US				CMP	10						To be revisited in winter once vegetation is minimal							no	no	
To Be Revisited	072	2019-08-15	12:39	110 S Main St Milford MA 01757 US				CMP	10						To be revisited when there is less vegetation							no	no	
To Be Revisited	017	2019-07-26	12:21	17–21 Dilla St Milford MA 01757 US	Headwall	Good		RCP	32”	Good	Yes	No	5%			Concrete						yes	yes	
To Be Revisited	OF-81	2019-06-04	15:09	3 Fortune Blvd Milford MA 01757 US											Outfall not accessible. Need police detail to open MH.							no	no	Outfall not accessible. Need police detail to open MH.
To Be Revisited	1024	2019-06-04	14:42	411–499 Fortune Blvd Milford MA 01757 US				RCP	12						Shot not taken on pipe							yes	yes	Need police detail to open upstream MH
To Be Revisited	253	2019-06-04	14:31	350 E Main St Milford MA 01757 US				RCP	12						2 CBs and a DMH lead to culvert. No info on arcmap for these structures							no	no	2 CBs and a DMH lead to culvert. No info on arcmap for these structures. May need police detail for upstream structure
Not Outfall	OF-14	2019-06-04	14:52	347–383 Fortune Blvd Milford MA 01757 US	Flared End Section			RCP	12						MH							no	no	Drain MH
Not Outfall	1292	2019-06-04	12:58	51 Maple St Milford MA 01757 US											Structure is a culvert inlet. Pipe from 1292 to nearest upstream MH does not exist.							no	no	Structure is a culvert inlet. Pipe from 1292 to nearest upstream MH does not exist.
Not Outfall	1158	2019-06-05	09:07	173 Purchase St Milford MA 01757 US	Culvert	Good	Stone	RCP	36”	Good	Yes	No	No	Culverted stream	Structure is a culvert not an outfall	Stone						yes	yes	Culvert outlet
Not Outfall	088	2019-08-15	13:23	43 Fruit St Milford MA 01757 US				PVC	4		No		No	No	Not an outfall.							no	no	This has not been confirmed as an outfall, small PVC pipe. Unsure of connectivity.
Not Outfall	030	2019-07-26	11:56	49 Sumner St Milford MA 01757 US	Pipe			HDPE	12		No	None	No	No	BMP outlet, behind fence, potentially private	None						yes	yes	
Not Outfall	1001	2019-06-05	12:50	66 Whitewood Rd Milford MA 01757 US	Headwall	Poor									Falling over, box culvert	Concrete						yes	yes	

Table 4: Outfalls to be Revisited
June - August 2019

Status	Outfall ID	Address	Inspection Notes	Additional Notes	Action
Could not Locate	038	222 Central St Milford MA 01757 US	Private	Unable to access. No upstream structures located.	Verify Private land
To Be Revisited	027	Unknown	Private		Verify Private land
To Be Revisited	302	Unknown	Private		Verify Private land
To Be Revisited	1026	2 Julie Cir Milford MA 01757 US	Headwall fell over. Overflow outlet from retention pond.		Town to maintain structure
Could not Locate	OF-131	173 Purchase St Milford MA 01757 US	Can't locate, assumed	Unable to locate	Town to locate structure
Could not Locate	041	186 Central St Milford MA 01757 US	Could not locate, may not exist?	No outfalls or structures	Town to locate structure
Could not Locate	076	110 S Main St Milford MA 01757 US	Not sure this is an outfall. Not located in field. Excessive vegetation.		Town to clear out vegetation
Could not Locate	075	110 S Main St Milford MA 01757 US	Not sure this is an outfall. Not located in vegetation.		Town to clear out vegetation
Could not Locate	071	110 S Main St Milford MA 01757 US			Town to clear out vegetation
Could not Locate	313	68–74 Cedar St Milford MA 01757 US	Pipe seems to be GPSd behind 4' of vegetation, and over a chain linked fence, to edge of water. Unable to scale this fence covered in		Town to clear out vegetation
Could not Locate	OF-83	91 Cedar St Milford MA 01757 US		Pipe may be completely submerged, not able to visually confirm location.	Town to clear out vegetation
To Be Revisited	073	110 S Main St Milford MA 01757 US	To be revisited when there is less vegetation		Town to clear out vegetation
To Be Revisited	070	110 S Main St Milford MA 01757 US	To be revisited when there is less vegetation		Town to clear out vegetation
To Be Revisited	072	110 S Main St Milford MA 01757 US	To be revisited when there is less vegetation		Town to clear out vegetation
Could not Locate	039	30 Front St Milford MA 01757 US		No outfall, CB in front of garage door filled with white milky liquid, unable to see invert in CB	Town to clean CB
Could not Locate	003	38 Ramsdell St Milford MA 01757 US	Inlet located with flow. Could not locate outfall.	Outfall not accessible. Need police detail to open MH.	Police Detail
To Be Revisited	OF-81	3 Fortune Blvd Milford MA 01757 US	Outfall not accessible. Need police detail to open MH.	Outfall not accessible. Need police detail to open MH.	Police Detail
To Be Revisited	1024	411–499 Fortune Blvd Milford MA 01757 US	Shot not taken on pipe	Need police detail to open upstream MH	Police Detail
To Be Revisited	253	350 E Main St Milford MA 01757 US	2 CBs and a DMH lead to culvert. No info on arcmap for these structures	2 CBs and a DMH lead to culvert. No info on arcmap for these structures. May need police detail for upstream structure	Police Detail
Could not Locate	077	125–135 Depot St Milford MA 01757 US	Not sure this is an OF. Not located in the field.		*EP to locate structure*
To Be Revisited	291	11 Water St Milford MA 01757 US			*EP to locate structure*
To Be Revisited	292	12 Water St Milford MA 01757 US			*EP to locate structure*

ENVIRONMENTAL PARTNERS

TECHNICAL MEMORANDUM

Date: September 18, 2020

To Michael Dean, P.E. –Town Engineer, Town of Milford

Scott Crisafulli – Highway Surveyor, Town of Milford

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

CC Natalie Pommersheim – Project Manager, Environmental Partners

Subject Illicit Discharge Detection & Elimination (IDDE) Investigations
MS4 General permit Assistance for the Office of Planning & Engineering

This memorandum summarizes the FY20 Dry Weather Investigations, outlined in Task 2 of the Agreement for Professional Engineering Services –MS4 General permit Assistance for the Office of Planning & Engineering of the Town of Milford.

Under this task, Environmental Partners Group, Inc. (EP) conducted outfall screening and sampling over the course of three (3) days in June 2020. During the time of the outfall screening, the weather was clear. There was 0.44 inches of precipitation in the previous 48 hours of the June 9th inspection event, and there was 0.0 inches of precipitation in the previous 48 hours of the June 10th and 19th inspection events. A total of forty-seven (47) outfalls were screened, of which two were found to be flowing during dry weather. Due to the ongoing COVID-19 pandemic, EP's field work protocol was to avoid interacting with residents while conducting outfall investigations. Any outfalls that would require crossing through private property were avoided during this investigation, and will be prioritized in future visits when safe to do so.

Outfall Sampling

On June 9th, 10th and 19th, 2020, EP staff attempted to visit eighty-nine (89) outfalls during dry weather, approximately 46% of the 193 total identified MS4 outfalls in the Town of Milford. The locations of all eighty-nine (89) screened outfalls are shown on Figure 1: Dry Weather Outfall Sampling Locations.

Throughout the outfall screening process, EP personnel made the following observations:

- Forty-Five (45) outfalls were found to be dry.
- Two (2) outfalls (OF-123 and OF-180) were observed to be flowing during dry weather. EP personnel sampled these outfalls on June 10, 2020.
- Seven (7) outfalls (OF-117, OF-166, OF-169, 1039, 1041, 1097, 1100) could not be safely accessed due to their proximity to private residences. Due to the ongoing COVID-19 pandemic, EP field work protocol is to avoid interacting with residents while conducting outfall investigations. Any outfalls that would require crossing through private property were avoided. These 7 outfalls will be targeted for inspection in Fiscal Year 2021.
- Seven (7) outfalls (OF-81, OF-173, OF-292, 3, 25, 253, 1024) require further inspection of upstream structures that may require a police detail. These 7 outfalls will be targeted for inspection in Fiscal Year 2021.
- Five (5) outfalls (OF-193, OF-371, 313, 1040, 1053) require clearing of heavy brush before being revisited. These 5 outfalls will be targeted for inspection in Fiscal Year 2021.
- Four (4) outfalls could not be located by field personnel. These 4 outfalls will be targeted for inspection in Fiscal Year 2021.

Results and Recommendations

Of the 2 outfalls that were sampled during dry weather, one (1) tested above the limit threshold for Total Chlorine. The sample collected from OF-123, which discharges to Huckleberry Brook, had a Chlorine concentration of 0.12 mg/L, which is above the EPA Benchmark for Chlorine of 0.02 mg/L. All sampling results are compiled in Table 1: Dry Weather Outfall Sampling Results.

As stated in the Permit, a Problem Outfall is defined as one with known or suspected contributions of illicit discharges based on previous screening results indicating likely sewer input. Likely sewer input is classified as: 1) olfactory or visual evidence of sewage, 2) 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 3) Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L and detectable levels of chlorine. If any outfalls are categorized as Problem Outfalls, they are to be reprioritized in the outfall ranking as part of the IDDE plan, and ranked at the top of the Problem Priority Outfalls category for investigation. Investigations of catchments associated with Problem Outfalls are to begin no later than two (2) years from the permit effective date.

Although OF-123 does not qualify as a Problem Outfall, EP recommends that the Town reprioritize the outfalls ranking for catchment investigations.

In order to comply with the Permit, EP recommends screening the remaining 23 outfall locations in Year 3 of the Permit. This will ensure that all MS4 outfalls have been visited by June 2021, within the first three (3) years of the Permit.

Attachments

Milford MS4 Certification Page

Table 1: Dry Weather Outfall Sampling Results

Figure 1: Dry Weather Outfall Sampling Locations

Laboratory Analytical Results

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

Table 1: Dry Weather Outfall Sampling Results
June 2020

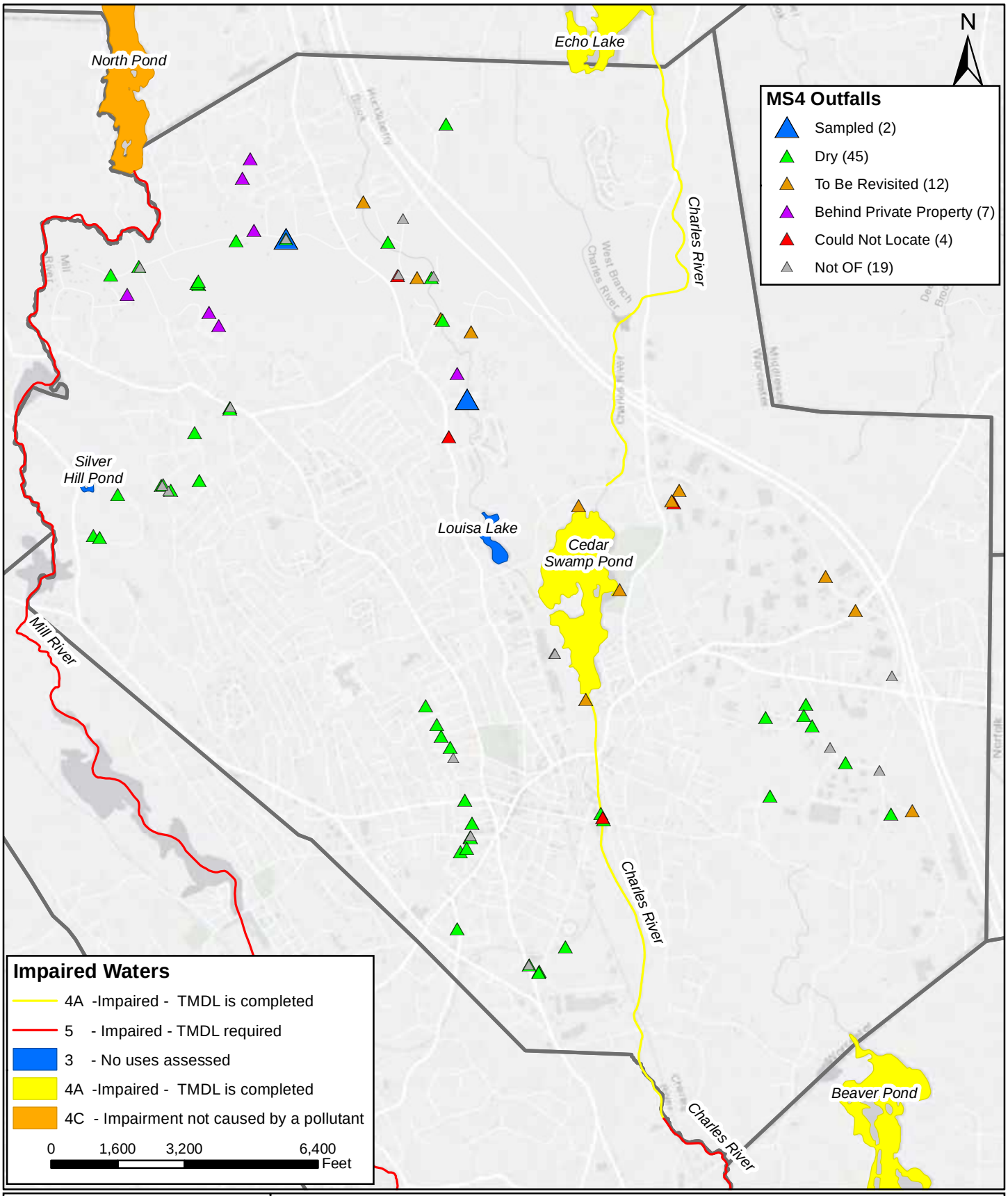
June 10, 2020

Location		*Pinewood Road*	*Camp Street*
Outfall ID		**OF-123**	**OF-180**
Date Sampled		6/10/2020	6/10/2020
Time Sampled		11:00 AM	11:45 AM
Field Test Results	***Threshold***		
Temperature (°C)		17.1	13
Conductivity (µS/cm)	2000 (µS/cm)	441.1	407.8
Salinity (ppt)		0.21	0.2
Dissolved Oxygen (mg/L)		6.69	7.7
pH	<6.5, >8.0	7.86	7.43
Analytical Results			
Nitrogen, Ammonia (mg/L)	0.5 mg/L	0.1	ND
Surfactants, MBAS (mg/L)	0.25 mg/L	0.05	0.05
Phosphorus, Total (mg/L)		0.328	0.017
Chlorine, Total (mg/L)	0.02 mg/L	**0.12**	ND
E. Coli (MPN/100 mL)	126*/235** MPN/100 mL	1	34.51

Notes:
ND: Non-Detect
Bold Values exceed contaminant criteria.

*MA Department of Public Health Swimming Code
**US EPA Guidelines - Recreational Water Quality Advisory (235 CFU/100 mL)

ENVIRONMENTAL PARTNERS



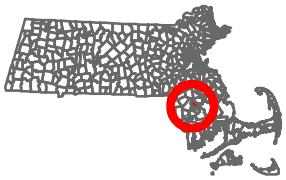


Figure 1
Dry Weather Outfall Sampling Locations
Milford, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Milford.311\FY20 Stormwater\2. Outfall Sampling\Report\Figure 1. Dry Weather Outfall Sampling Locations.mxd

ANALYTICAL REPORT

Lab Number:	L2024055
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	William Watts
Phone:	(617) 657-0262
Project Name:	MILFORD OF
Project Number:	Not Specified
Report Date:	06/16/20

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: MILFORD OF
Project Number: Not Specified

Lab Number: L2024055
Report Date: 06/16/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2024055-01	OF-123	WATER	MILFORD, MA	06/10/20 11:00	06/10/20
L2024055-02	OF-180	WATER	MILFORD, MA	06/10/20 11:45	06/10/20

Project Name:	MILFORD OF	**Lab Number:**	L2024055
Project Number:	Not Specified	**Report Date:**	06/16/20

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:	MILFORD OF	**Lab Number:**	L2024055
Project Number:	Not Specified	**Report Date:**	06/16/20

Case Narrative (continued)

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were delivered directly from the sampling site but were not on ice.

Surfactants, MBAS

The WG1380294-3 Laboratory Duplicate RPD for surfactants, mbas (46%), performed on L2024055-02, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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: Caitlin Walukevich

Title: Technical Director/Representative

Date: 06/16/20

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD OF
Project Number: Not Specified

Lab Number: L2024055
Report Date: 06/16/20

SAMPLE RESULTS

Lab ID: L2024055-01
Client ID: OF-123
Sample Location: MILFORD, MA

Date Collected: 06/10/20 11:00
Date Received: 06/10/20
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										
E. Coli (MPN)	1		MPN/100ml	1	NA	1	-	06/10/20 16:07	121,9223B	CM
General Chemistry - Westborough Lab										
Chlorine, Total Residual	0.12		mg/l	0.02	--	1	-	06/10/20 23:47	121,4500CL-D	AS
Nitrogen, Ammonia	0.090		mg/l	0.075	--	1	06/11/20 11:43	06/11/20 22:06	121,4500NH3-BH	AT
Phosphorus, Total	0.328		mg/l	0.010	--	1	06/11/20 10:15	06/11/20 13:51	121,4500P-E	SD
Surfactants, MBAS	0.050		mg/l	0.050	--	1	06/11/20 06:00	06/11/20 10:55	121,5540C	JA

Project Name: MILFORD OF
Project Number: Not Specified

Lab Number: L2024055
Report Date: 06/16/20

SAMPLE RESULTS

Lab ID: L2024055-02
Client ID: OF-180
Sample Location: MILFORD, MA

Date Collected: 06/10/20 11:45
Date Received: 06/10/20
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										
E. Coli (MPN)	34.51		MPN/100ml	1	NA	1	-	06/10/20 16:07	121,9223B	CM
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/10/20 23:47	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/11/20 11:43	06/11/20 22:07	121,4500NH3-BH	AT
Phosphorus, Total	0.017		mg/l	0.010	--	1	06/11/20 10:15	06/11/20 13:53	121,4500P-E	SD
Surfactants, MBAS	0.050		mg/l	0.050	--	1	06/11/20 06:00	06/11/20 10:55	121,5540C	JA

Project Name: MILFORD OF
Project Number: Not Specified
Lab Number: L2024055
Report Date: 06/16/20

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): 01-02 Batch: WG1380086-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	06/10/20 16:07	121,9223B	CM
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1380198-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/10/20 23:47	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1380294-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	06/11/20 06:00	06/11/20 10:52	121,5540C	JA
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1380357-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	06/11/20 10:15	06/11/20 13:44	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1380367-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/11/20 11:43	06/11/20 22:02	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: MILFORD OF

Project Number: Not Specified

Lab Number: L2024055

Report Date: 06/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1380198-2								
Chlorine, Total Residual	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1380294-2								
Surfactants, MBAS	96		-		65-126	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1380357-2								
Phosphorus, Total	104		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1380367-2								
Nitrogen, Ammonia	94		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD OF
Project Number: Not Specified

Lab Number: L2024055
Report Date: 06/16/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380198-4 QC Sample: L2024055-02 Client ID: OF-180												
Chlorine, Total Residual	ND	0.25	0.22	88		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380294-4 QC Sample: L2024055-02 Client ID: OF-180												
Surfactants, MBAS	0.050	0.4	0.500	112		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380357-3 QC Sample: L2023829-01 Client ID: MS Sample												
Phosphorus, Total	0.029	0.5	0.534	101		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380367-4 QC Sample: L2024027-01 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.60	90		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD OF

Project Number: Not Specified

Lab Number: L2024055

Report Date: 06/16/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380198-3 QC Sample: L2024055-01 Client ID: OF-123						
Chlorine, Total Residual	0.12	0.11	mg/l	9		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380294-3 QC Sample: L2024055-02 Client ID: OF-180						
Surfactants, MBAS	0.050	0.080	mg/l	**46**	Q	32
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380357-4 QC Sample: L2023829-01 Client ID: DUP Sample						
Phosphorus, Total	0.029	0.026	mg/l	11		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1380367-3 QC Sample: L2024027-01 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	0.105	mg/l	NC		20

Project Name: MILFORD OF
Project Number: Not Specified

Lab Number: L2024055
Report Date: 06/16/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2024055-01A	Plastic 60ml unpreserved	A	6	6	17.2	Y	Absent		MBAS-5540(2)
L2024055-01B	Bacteria Cup Na2S2O3 preserved	A	NA		17.2	Y	Absent		E-COLI-QT(.33)
L2024055-01C	Bacteria Cup Na2S2O3 preserved	A	NA		17.2	Y	Absent		E-COLI-QT(.33)
L2024055-01D	Plastic 500ml H2SO4 preserved	A	<2	<2	17.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2024055-01E	Amber 500ml unpreserved	A	6	6	17.2	Y	Absent		TRC-4500(1)
L2024055-01F	Plastic 950ml unpreserved	A	6	6	17.2	Y	Absent		MBAS-5540(2)
L2024055-02A	Plastic 60ml unpreserved	A	6	6	17.2	Y	Absent		MBAS-5540(2)
L2024055-02B	Bacteria Cup Na2S2O3 preserved	A	NA		17.2	Y	Absent		E-COLI-QT(.33)
L2024055-02C	Bacteria Cup Na2S2O3 preserved	A	NA		17.2	Y	Absent		E-COLI-QT(.33)
L2024055-02D	Plastic 500ml H2SO4 preserved	A	<2	<2	17.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2024055-02E	Amber 500ml unpreserved	A	6	6	17.2	Y	Absent		TRC-4500(1)
L2024055-02F	Plastic 950ml unpreserved	A	6	6	17.2	Y	Absent		MBAS-5540(2)

*Values in parentheses indicate holding time in days

Project Name:	MILFORD OF	**Lab Number:**	L2024055
Project Number:	Not Specified	**Report Date:**	06/16/20

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.
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.

Footnotes

Report Format: Data Usability Report

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. 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.

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 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

Project Name:	MILFORD OF	**Lab Number:**	L2024055
Project Number:	Not Specified	**Report Date:**	06/16/20

Data Qualifiers

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.

Project Name:	MILFORD OF	**Lab Number:**	L2024055
Project Number:	Not Specified	**Report Date:**	06/16/20

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 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; 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.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
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.**

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.

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
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: 6/10/20

ALPHA Job #: L2024055

Client Information

Client: Environmental Partners
Address: 1900 Crown Colony Drive
Quincy, MA 02169
Phone: 617-657-0200
Email: wmw@envpartners.com

Additional Project Information:

Project Information

Project Name: Milford OF
Project Location: Milford, MA
Project #:
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; Ammonia, Total Phosphorus, Chloride, Surfactants, E. coli

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	Ammonia	Total Phosphorus	Chloride	Surfactants	E. coli	Sample Comments	TOTAL # BOTTLES
24055-01	OF-123	6-10-20	1100	SW	STG	X	X	X	X			6
02	1157 = OF-180	6-10-20	1145	SW	STG	X	X	X	X		change ID to OF-180, microbial	6
Container Type						P	A	P	B			
Preservative						D	A	A	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
Stephen Gall	6-10-20 1270	CC Jebeau ATL	6/10/20 1230

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

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

ENVIRONMENTAL PARTNERS
An Apex Company

TECHNICAL MEMORANDUM

Date: August 27, 2021

To Michael Dean, P.E. – Town Engineer, Town of Milford

Scott Crisafulli – Highway Surveyor, Town of Milford

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

CC Natalie Pommersheim – Project Manager, Environmental Partners

Subject FY21 Illicit Discharge Detection & Elimination (IDDE) Dry Weather Screening
MS4 General Permit Assistance for the Office of Planning & Engineering

This memorandum summarizes the FY21 Dry Weather Investigations, outlined in Task 4C of the Agreement for Professional Engineering Services – MS4 General Permit Assistance for the Office of Planning & Engineering of the Town of Milford.

Under this task, Environmental Partners Group, LLC. (EP) conducted outfall screening and sampling over the course of five (5) days. During the time of outfall screenings, the weather was clear. There was less than 0.10 inches of precipitation in the 24 hours prior to all screenings. A total of eighty (80) outfalls were screened, of which five (5) were found to be flowing during dry weather. The Town of Milford's current MS4 outfall inventory includes 248 outfalls.

Additionally, EP inventoried, field-verified, and screened during dry weather nine (9) stormwater structures that represent MS4 interconnections or locations where the Town of Milford's stormwater system discharges into another MS4 that is managed by either neighboring Towns or the Massachusetts Department of Transportation (MassDOT). Of those interconnections screened, one (1) was found flowing during dry weather and sampled for field and laboratory analysis.

Outfall Sampling

On May 14, May 20, June 28, July 27, and August 4, 2021, EP staff attempted to visit eighty (80) outfalls during dry weather. The locations of all screened outfalls are shown on Figure 1: Outfall and Interconnection Sampling Locations and listed on Table 1: Outfall Sampling Locations. All the outfalls unable to be screened or located during the FY20 outfall screenings were successfully screened during this round of sampling with the help of Milford Highway Department staff.

Throughout the outfall screening process, EP staff made the following observations:

- Fifty-three (53) outfalls were found to be dry.
- Five (5) outfalls (25, 1040, 1106, OF-315, and OF-503) were observed to be flowing during dry weather. EP personnel sampled these outfalls on May 20, June 28, July 27, and August 4, 2021.
- Twenty-two (22) outfall structures were removed from the Town's MS4 Outfall inventory. Field staff verified that these structures were inlets, outlets to stormwater best management practices (BMPs), or located on private roads receiving no Town drainage.

Interconnection Sampling

On May 28 and August 4, 2021, EP staff visited nine (9) interconnection locations during dry weather. These interconnections comprise the Town's entire inventory of interconnections where the Town's MS4 stormwater discharges into another MS4. The locations of all interconnections screened are listed on Table 2: Interconnection Sampling Locations and shown on Figure 1: Outfall and Interconnection Sampling Locations.

Throughout the interconnection screening process, EP staff made the following observations:

- Eight (8) interconnection locations were found to be dry.
- One (1) interconnection (I-2) at the intersection of Asylum Street and West Street was found to be flowing during dry weather. EP staff sampled this location on August 4, 2021.

Results and Recommendations

Of the five (5) outfalls and one (1) interconnection sampled during dry weather, four (4) structures had parameter concentrations above regulated thresholds:

- Outfall OF-315, which discharges to Godfrey Brook, had an E. Coli concentration of 1046.24 MPN/100mL, which is above the EPA Benchmark for E. Coli of 236 MPN/100mL.
- Outfall OF-503, which discharges to Littlefield Pond, had an E. Coli concentration of 547.5 MPN/100mL, which is above the EPA Benchmark for E. Coli of 236 MPN/100mL.
- Outfall 1106, which discharges to Hopping Brook, had a specific conductance concentration of 2,189 µg/L, which is slightly above the EPA Benchmark for specific conductance of 2,000 µg/L.
- Interconnection I-2, which connects the Town of Milford's MS4 to the MassDOT's MS4, had a pH value of 8.04, which is slightly above the EPA Benchmark range of acceptable pH values of less than 8.0 and more than 6.5.

All sampling results are compiled in Table 3: Stormwater Field Screening and Analytical Results. EP recommends that the Town reprioritize the outfall/interconnection rankings for catchment investigations based on these results.

Additionally, the Town should revisit the eight (8) outfalls in their MS4 outfall inventory remaining to be screened. These outfalls are listed on Table 4: Remaining Outfalls to be Screened. These are structures GZA previously screened during dry weather and found to be flowing. GZA sampled for parameters required under the 2003 MS4 Permit, but not all parameters required under the current 2018 MS4 Permit. Therefore, they need to be re-screened.

Attachments

Milford MS4 Certification Page

Figure 1: Outfall and Interconnection Sampling Locations

Table 1: Dry Weather Outfall Sampling Locations

Table 2: Dry Weather Interconnection Sampling Locations

Table 3: Stormwater Field Screening and Analytical Results

Table 4: Remaining Outfalls to be Screened

Laboratory Analytical Results

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:

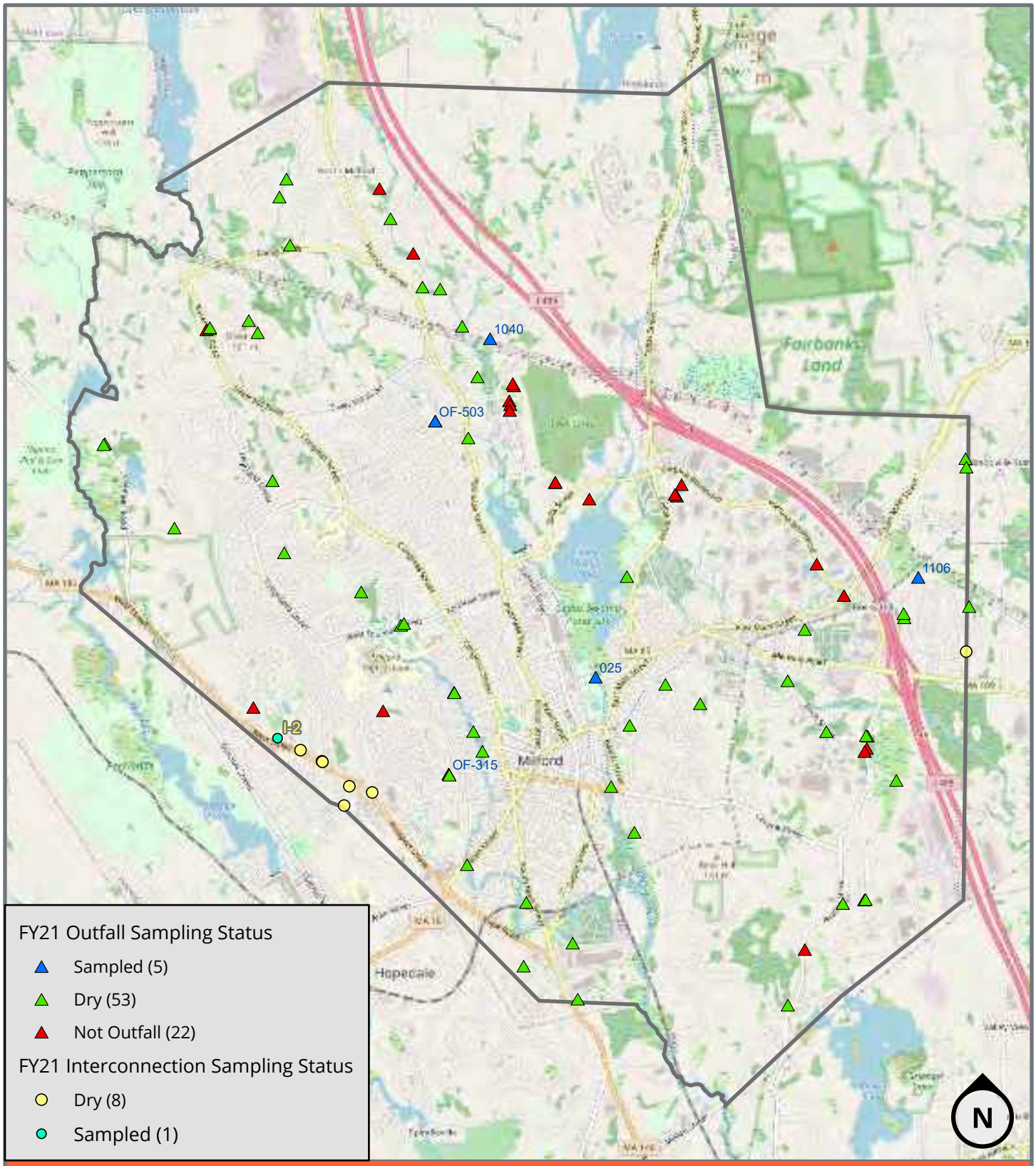
☐ Attached to this document (document name listed below)

☐ 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

Figure 1: Outfall and Interconnection Sampling Locations

Milford, Massachusetts

0 0.25 0.5 1 Miles

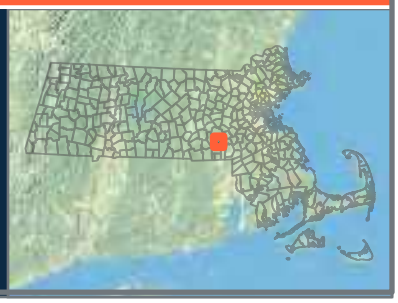


Table 1: Outfall Sampling Locations
Milford, MA

Receiving Waterbody	Outfall ID	Approximate Street Address	Screening Date	Outfall Sampling Status
Milford Pond	25	13 Hayward Field	5/20/2021	Sampled
Unnamed Pond North of Huckleberry Brook	1040	25 Eben Street	6/28/2021	Sampled
Unnamed Wetlands West of Hopping Brook	1106	27 Virginia Drive	6/28/2021	Sampled
Unnamed Tributary to Huckleberry Brook	OF-503	1 1/2 Whip O Will Lane	6/28/2021	Sampled
Godfrey Brook	OF-315	57 West Street	8/4/2021	Sampled
Charles River	41	222 Central Street	6/28/2021	Dry
Unnamed Tributary to Charles River	55	3 Howard Street	6/28/2021	Dry
Godfrey Brook	89	87 South Main Street	5/20/2021	Dry
Unnamed Wetlands East of Stall Brook	285	10 Bodio Circle	7/27/2021	Dry
Unnamed Wetlands East of Stall Brook	286	12 Bodio Circle	7/27/2021	Dry
Milford Pond	313	60 Cedar Street	5/14/2021	Dry
Unnamed Wetlands East of Huckleberry Brook	1039	7 Dynasty Drive	7/27/2021	Dry
Unnamed Tributary to Huckleberry Brook (2)	1041	3 Stub Toe Lane	5/20/2021	Dry
Huckleberry Brook	1053	23 Eben Street	7/27/2021	Dry
Godfrey Brook	1076	139 West Spruce Street	6/28/2021	Dry
Godfrey Brook	1077	58 West Street	7/27/2021	Dry
Charles River	1096	141 Beaver Street	8/4/2021	Dry
Unnamed Tributary to Huckleberry Brook (2)	1097	2 Stub Toe Lane	7/27/2021	Dry
Godfrey Brook	1114	29 Courtland Street	5/20/2021	Dry
Unnamed Wetlands West of Hopping Brook	1132	3 Pine Needle Circle	5/20/2021	Dry
Unnamed Wetlands West of Hopping Brook	1133	8 Whispering Pine Drive	5/20/2021	Dry
Unnamed Wetlands to Little Field Pond	1135	18 Field Pond Road	6/28/2021	Dry
Godfrey Brook	1238	1 Godfrey Lane	6/28/2021	Dry
Godfrey Brook	1239	3 Congress Terrace	5/20/2021	Dry
Unnamed tributary East of Fiske Mill Pond	1151A	21 Reservoir Street	5/20/2021	Dry
Unnamed tributary East of Fiske Mill Pond	1151B	21 Reservoir Street	7/27/2021	Dry
Unnamed Tributary to Huckleberry Brook (5)	OF-117	12 Joan Circle	6/28/2021	Dry
Unnamed Tributary to Louisa Lake	OF-131	169 Purchase Street	6/28/2021	Dry
Unnamed Wetland to Stall Brook	OF-16	33 Beaver Street	6/28/2021	Dry
Unnamed Tributary to Huckleberry Brook (2)	OF-166	31 Camp Street	5/14/2021	Dry
Unnamed Tributary to Huckleberry Brook (5)	OF-169	8 Fox Lane	5/20/2021	Dry
Huckleberry Brook	OF-173	15 Windsor Road	6/28/2021	Dry
Huckleberry Brook	OF-176	9 Haven Street	8/4/2021	Dry
Huckleberry Brook	OF-193	6 Rupert Road	5/20/2021	Dry
Unnamed Tributary to Huckleberry Brook (6)	OF-199B	3 Hamel Circle	6/28/2021	Dry
Unnamed Tributary to Stall Brook	OF-21	10 Birch Street	8/4/2021	Dry
Godfrey Brook	OF-226	Milford	7/27/2021	Dry
Unnamed Tributary to Stall Brook	OF-234	10 Turin Street	5/14/2021	Dry
Godfrey Brook	OF-270	12 West Pine Street	6/28/2021	Dry
Unnamed Tributary to Stall Brook	OF-292	32 Maple Street	6/28/2021	Dry
Charles River	OF-307	69 East Street	7/27/2021	Dry
Godfrey Brook	OF-316	57 West Street	8/4/2021	Dry
Godfrey Brook	OF-341	138 South Main Street	5/20/2021	Dry
Godfrey Brook	OF-346	335 1/2 Main Street	6/28/2021	Dry
Unnamed Wetlands to Charles River	OF-361	22 Carroll Street	5/20/2021	Dry
Unnamed Wetlands to Stall Brook	OF-394	23 Birch Street	6/28/2021	Dry
Unnamed Tributary to Stall Brook	OF-43	27 Lena Lane	6/28/2021	Dry

Unnamed wetland to Godfrey Brook	OF-500	34 Jionzo Road	6/28/2021	Dry
Unnamed pond	OF-501	13 Fordham Drive	6/28/2021	Dry
Unnamed Tributary to Huckleberry Brook	OF-502	1 1/2 Whip O Will Lane	5/14/2021	Dry
Unnamed Tributary to Mill River	OF-504	Field Pond Rd	5/14/2021	Dry
Unnamed Tributary To Mill River	OF-505	Field Pond Rd	5/14/2021	Dry
Godfrey Brook	OF-506	10 Congress Terrace	6/28/2021	Dry
Unnamed Wetlands	OF-507	33 Beaver Street	6/28/2021	Dry
Unnamed Tributary to Beaver Pond	OF-508	21 Jencks Road	6/28/2021	Dry
Unnamed Wetlands to Stall Brook	OF-509	5 Mary Road	6/28/2021	Dry
Unnamed Wetlands to Charles River	OF-510	33 Parkhurst Street	6/28/2021	Dry
Unnamed Tributary to Beaver Pond	OF-94	122 Beaver Street	7/27/2021	Dry
-	1232	12 Jencks Road	6/28/2021	Not Outfall
-	OF-65	12 Governors Way	5/14/2021	Not Outfall
-	OF-68	1B Governors Way	5/14/2021	Not Outfall
Huckleberry Brook	OF-212	5 Farmer Circle	5/14/2021	Not Outfall
Huckleberry Brook	204	22 Haven Street	5/14/2021	Not Outfall
Unnamed Wetlands to Stall Brook	OF-396	33 Beaver Street	5/20/2021	Not Outfall
Unnamed Wetlands to Stall Brook	OF-397	33 Beaver Street	5/20/2021	Not Outfall
Unnamed Pond East of Milford Pond (2)	OF-81	3 Fortune Boulevard	6/28/2021	Not Outfall
Unnamed Pond East of Milford Pond (2)	OF-83	91 Cedar Street	6/28/2021	Not Outfall
Unnamed Pond East of Milford Pond (2)	1024	450 Fortune Boulevard	6/28/2021	Not Outfall
Milford Pond	3	57 1/2 Dilla Street	6/28/2021	Not Outfall
Unnamed Stream East of Milford Pond	253	256 East Main Street	6/28/2021	Not Outfall
Unnamed Pond East of Milford Pond (2)	OF-371	91 Cedar Street	6/28/2021	Not Outfall
-	OF-167	24 Reservoir Street	6/28/2021	Not Outfall
Unnamed Wetland	1092	24 Asylum Street	6/28/2021	Not Outfall
-	OF-66	28B Governors Way	6/28/2021	Not Outfall
-	OF-70	1B Governors Way	6/28/2021	Not Outfall
Unnamed Wetlands to Milford Pond	1170	4 Mohegan Circle	6/28/2021	Not Outfall
Godfrey Brook	OF-246	51 Madden Avenue	7/26/2021	Not Outfall
Unnamed Tributary to Beaver Pond	1019	136 Beaver Street	7/26/2021	Not Outfall
-	OF-67	5A Governors Way	7/27/2021	Not Outfall
Unnamed Wetlands to Charles River	OF-363	4 Mohegan Circle	7/27/2021	Not Outfall

Table 2: Interconnection Sampling Locations

Milford, MA

Interconnection ID	Interconnection With	Approximate Street Address	Screening Date	Interconnection Sampling Status
I-1	MassDOT	2 Western Ave	6/28/2021	Dry
I-11	Town of Medway	12 James Street	6/28/2021	Dry
I-12	MassDOT	18 Freedom Street	6/28/2021	Dry
I-13	MassDOT	0 Asylum Street	6/28/2021	Dry
I-2	MassDOT	0 Asylum Street	8/4/2021	Sampled
I-3	MassDOT	189 West Street	6/28/2021	Dry
I-4	MassDOT	189 West Street	6/28/2021	Dry
I-6	MassDOT	9 John Street	6/28/2021	Dry
I-9	MassDOT	95 Prospect Street	6/28/2021	Dry

Table 2: Stormwater Field Screening and Analytical Results
Milford, MA
August 2021

Structure Identification		1040		1106		25		OF-503		OF-315	I-2
Discharge Waterbody/Location		Unnamed Pond North of Huckleberry Brook		Unnamed Wetlands West of Hopping Brook		Milford Pond		Unnamed Wetlands North of Littlefield Pond		Unnamed Tributary to Godfrey Brook	Mass DOT
Approx. Address		25 Eben Street		27 Virginia Drive		13 Hayward Field		1 1/2 Whip O Will Lane		57 West Street	0 Asylum Street
Date Sampled		5/20/2021	7/27/2021	6/28/2021	7/27/2021	6/28/2021	7/27/2021	6/28/2021	7/27/2021	8/4/2021	8/4/2021
Sample Time		2:30 PM	11:30 AM	3:40 PM	10:50 AM	2:45 PM	10:55 AM	3:00 PM	11:10 AM	3:00 PM	2:30 PM
Field Test Results	**Threshold**										
Temperature (˚C)		15.2	-	18.8	-	15.6	-	18	-	21.9	18.8
Specific Conductance (µS/cm)	2000	768	-	**2189**	-	560	-	619	-	501	886
Salinity (ppt)		0.38	-	1.12	-	0.27	-	0.3	-	0.24	0.44
DO (mg/L)		6.52	-	6.38	-	3.60	-	6.73	-	5.11	7.98
pH	6.5-8.0	7.48	-	7.12	-	6.51	-	7.12	-	7.88	**8.04**
Total Chlorine (mg/L)	0.01	-	0.00	-	0.00	-	0.00	-	0.00	-	-
Analytical Results											
Ammonia as Nitrogen (mg/L)	0.5	ND	-	ND	-	0.141	-	0.096	-	ND	0.129
Biochemical Oxygen Demand (mg/L)		ND	-	-	-	ND	-	-	-	ND	ND
Chloride (TRC) (mg/L)		220	-	650	-	120	-	150	-	-	-
Coliform, Fecal (MF) (col/100mL)		ND	-	540	-	1600	-	ND	-	500	150
E. coli (MPN/100 mL)	236	1	-	1	-	6.32	-	**547.5**	-	**1046.24**	83.92
Phosphorus, Total (mg/L)		0.655	-	0.045	-	0.055	-	0.05	-	0.036	0.017
Surfactants, MBAS (mg/L)	0.25	ND	-	ND	-	ND	-	ND	-	ND	ND
Total Residual Chlorine (mg/L)	0.01	-	-	-	-	-	-	-	-	ND	ND

Notes:
- : Not Tested
ND: Non-detect
Bold Values exceed contaminant criteria

Table 4: Remaining Outfalls to be Screened

Milford, MA

Receiving Waterbody	Outfall ID	Approximate Street Address	Outfall Sampling Status
Charles River	314	2 Beach St	Not Screened - stormwater discharges to culverted portion of Charles River
Charles River	317	222 Central St	
Charles River	318	222 Central St	
Charles River	319	222 Central St	
Charles River	320	2 Beach St	
Charles River	323	2 Beach St	
Charles River	327	2 Archer Avenue	
Charles River	328	2 Archer Avenue	

ANALYTICAL REPORT

Lab Number:	L2126732
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Vern S. Lincoln
Phone:	(617) 657-0275
Project Name:	MILFORD OUTFALL SAMPLING
Project Number:	Not Specified
Report Date:	06/08/21

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: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2126732
Report Date: 06/08/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126732-01	1040	WATER	MILFORD, MA	05/20/21 14:30	05/20/21

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2126732
Project Number:	Not Specified	**Report Date:**	06/08/21

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:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2126732
Project Number:	Not Specified	**Report Date:**	06/08/21

Case Narrative (continued)

Coliform, Fecal (MF)

L2126732-01: 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: 06/08/21

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2126732
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126732-01
Client ID: 1040
Sample Location: MILFORD, MA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
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	-	05/20/21 21:30	121,9222D	JT
E. Coli (MPN)	1		MPN/100ml	1	NA	1	-	05/20/21 18:00	121,9223B	JT
General Chemistry - Westborough Lab										
Chloride	220		mg/l	10	--	10	-	06/08/21 00:28	121,4500CL-E	TL
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/07/21 16:00	06/07/21 22:59	121,4500NH3-BH	AT
Phosphorus, Total	0.655		mg/l	0.010	--	1	06/02/21 07:30	06/02/21 14:40	121,4500P-E	SD
BOD, 5 day	ND		mg/l	2.0	NA	1	05/20/21 23:55	05/25/21 19:35	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	05/22/21 01:30	05/22/21 05:29	121,5540C	AW

Project Name: MILFORD OUTFALL SAMPLING **Lab Number:** L2126732

Project Number: Not Specified **Report Date:** 06/08/21

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 Batch: WG1501743-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	05/20/21 18:00	121,9223B	JT
Microbiological Analysis - Westborough Lab for sample(s): 01 Batch: WG1501748-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	05/20/21 21:30	121,9222D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1501771-1										
BOD, 5 day	ND		mg/l	2.0	NA	1	05/20/21 23:55	05/25/21 19:35	121,5210B	JD
General Chemistry - Westborough Lab for sample(s): 01 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): 01 Batch: WG1506396-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	06/02/21 07:30	06/02/21 14:15	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1508716-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/07/21 16:00	06/07/21 22:55	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1508720-1										
Chloride	ND		mg/l	1.0	--	1	-	06/07/21 22:53	121,4500CL-E	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: MILFORD OUTFALL SAMPLING

Project Number: Not Specified

Lab Number: L2126732

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1501771-2								
BOD, 5 day	105		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1502328-2								
Surfactants, MBAS	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1506396-2								
Phosphorus, Total	101		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1508716-2								
Nitrogen, Ammonia	98		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1508720-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2126732
Report Date: 06/08/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1501771-4 QC Sample: L2126294-01 Client ID: MS Sample												
BOD, 5 day	ND	100	110	112		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1502328-4 QC Sample: L2126976-01 Client ID: MS Sample												
Surfactants, MBAS	ND	0.4	0.410	102		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1506396-4 QC Sample: L2126580-01 Client ID: MS Sample												
Phosphorus, Total	0.047	0.5	0.562	103		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1508716-4 QC Sample: L2128191-01 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.31	83		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1508720-4 QC Sample: L2126659-01 Client ID: MS Sample												
Chloride	16	20	37	105		-	-		58-140	-		7

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD OUTFALL SAMPLING

Project Number: Not Specified

Lab Number: L2126732

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1501771-3 QC Sample: L2126294-01 Client ID: DUP Sample						
BOD, 5 day	ND	ND	mg/l	NC		35
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1502328-3 QC Sample: L2126976-01 Client ID: DUP Sample						
Surfactants, MBAS	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1506396-3 QC Sample: L2126580-01 Client ID: DUP Sample						
Phosphorus, Total	0.047	0.047	mg/l	0		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1508716-3 QC Sample: L2128191-01 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1508720-3 QC Sample: L2126659-01 Client ID: DUP Sample						
Chloride	16	16	mg/l	0		7

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2126732
Report Date: 06/08/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126732-01A	Bacteria Cup Na2S2O3 preserved	A	NA		5.4	Y	Absent		E-COLI-QT(.33)
L2126732-01B	Bacteria Cup Na2S2O3 preserved	A	NA		5.4	Y	Absent		E-COLI-QT(.33)
L2126732-01C	Bacteria Cup Na2S2O3 preserved	A	NA		5.4	Y	Absent		F-COLI-MF(.33)
L2126732-01D	Bacteria Cup Na2S2O3 preserved	A	NA		5.4	Y	Absent		F-COLI-MF(.33)
L2126732-01E	Plastic 120ml unpreserved	A	7	7	5.4	Y	Absent		CL-4500(28)
L2126732-01F	Plastic 500ml H2SO4 preserved	A	<2	<2	5.4	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2126732-01G	Plastic 950ml unpreserved	A	7	7	5.4	Y	Absent		MBAS-5540(2),BOD-5210(2)

*Values in parentheses indicate holding time in days

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2126732
Project Number:	Not Specified	**Report Date:**	06/08/21

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.

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2126732
Project Number:	Not Specified	**Report Date:**	06/08/21

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

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2126732
Project Number:	Not Specified	**Report Date:**	06/08/21

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.

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2126732
Project Number:	Not Specified	**Report Date:**	06/08/21

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: 5/20/21

ALPHA Job #: L2126732

ALPHA ANALYTICAL
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
Quincy MA 02169
Phone: 617-657-0275
Email: VSL@envpartners.com

Additional Project Information:

Project Information

Project Name: Milford Outfall Sampling
Project Location: Milford, MA
Project #:
Project Manager:
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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	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: ☐ Extract Only ☐ Fingerprint~~ BOD SM 5210	Ammonia Nitrogen SM 4500	Chloride SM 4500	E. Coli. SM 9213	Surfactants SM 5310	Total Phosphorus SM 4500	Fecal Coliform SM 9222	Sample Comments	TOTAL # BOTTLES
26732-01	1040	5/20/21	14:30	Storm water	VSL								X	X	X	X	X	X			
Container Type													P	P	B	P	B	B			
Preservative													D	A	H	A	D	H			

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

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
[signature]	5/20/21 15:35	[signature]	5/20/21 1535

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:	L2134985
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Natalie Pommersheim
Phone:	(617) 657-0257
Project Name:	MILFORD OUTFALL SAMPLING
Project Number:	Not Specified
Report Date:	07/16/21

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: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2134985-01	025	WATER	MILFORD, MA	06/28/21 14:45	06/28/21
L2134985-02	NEW 2	WATER	MILFORD, MA	06/28/21 15:00	06/28/21
L2134985-03	1106	WATER	MILFORD, MA	06/28/21 15:40	06/28/21

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2134985
Project Number:	Not Specified	**Report Date:**	07/16/21

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:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2134985
Project Number:	Not Specified	**Report Date:**	07/16/21

Case Narrative (continued)

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice and delivered directly from the sampling site. This is considered acceptable since the samples were in the process of cooling.

Coliform, Fecal (MF)

L2134985-02: 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: Caitlin Walukevich

Title: Technical Director/Representative

Date: 07/16/21

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

SAMPLE RESULTS

Lab ID: L2134985-01
Client ID: 025
Sample Location: MILFORD, MA

Date Collected: 06/28/21 14:45
Date Received: 06/28/21
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)	1600		col/100ml	10	NA	10	-	06/28/21 19:34	121,9222D	SH
E. Coli (MPN)	6.32		MPN/100ml	1	NA	1	-	06/28/21 18:35	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	120		mg/l	10	--	10	-	06/29/21 22:25	121,4500CL-E	TL
Nitrogen, Ammonia	0.141		mg/l	0.075	--	1	07/15/21 11:00	07/15/21 20:57	121,4500NH3-BH	AT
Phosphorus, Total	0.055		mg/l	0.010	--	1	07/08/21 11:30	07/09/21 09:31	121,4500P-E	SD
BOD, 5 day	ND		mg/l	2.0	NA	1	06/28/21 22:30	07/03/21 16:34	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	06/30/21 01:00	06/30/21 05:25	121,5540C	AW

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

SAMPLE RESULTS

Lab ID: L2134985-02
Client ID: NEW 2
Sample Location: MILFORD, MA

Date Collected: 06/28/21 15:00
Date Received: 06/28/21
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	-	06/28/21 19:34	121,9222D	SH
E. Coli (MPN)	547.5		MPN/100ml	1	NA	1	-	06/28/21 18:35	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	150		mg/l	10	--	10	-	06/29/21 22:26	121,4500CL-E	TL
Nitrogen, Ammonia	0.096		mg/l	0.075	--	1	07/15/21 11:00	07/15/21 20:58	121,4500NH3-BH	AT
Phosphorus, Total	0.050		mg/l	0.010	--	1	07/08/21 11:30	07/09/21 09:32	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	06/30/21 01:00	06/30/21 05:25	121,5540C	AW

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

SAMPLE RESULTS

Lab ID: L2134985-03
Client ID: 1106
Sample Location: MILFORD, MA

Date Collected: 06/28/21 15:40
Date Received: 06/28/21
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)	540		col/100ml	10	NA	10	-	06/28/21 19:34	121,9222D	SH
E. Coli (MPN)	1		MPN/100ml	1	NA	1	-	06/28/21 18:35	121,9223B	SH
General Chemistry - Westborough Lab										
Chloride	650		mg/l	10	--	10	-	06/30/21 10:44	121,4500CL-E	MR
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/15/21 11:00	07/15/21 20:59	121,4500NH3-BH	AT
Phosphorus, Total	0.045		mg/l	0.010	--	1	07/08/21 11:30	07/09/21 09:33	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	06/30/21 01:00	06/30/21 05:26	121,5540C	AW

Project Name: MILFORD OUTFALL SAMPLING **Lab Number:** L2134985

Project Number: Not Specified **Report Date:** 07/16/21

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): 01-03 Batch: WG1517951-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	06/28/21 18:35	121,9223B	SH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1517957-1										
BOD, 5 day	ND		mg/l	2.0	NA	1	06/28/21 22:30	07/03/21 16:34	121,5210B	JD
Microbiological Analysis - Westborough Lab for sample(s): 01-03 Batch: WG1517960-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	06/28/21 19:34	121,9222D	SH
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1518466-1										
Chloride	ND		mg/l	1.0	--	1	-	06/29/21 21:37	121,4500CL-E	TL
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1518584-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	06/30/21 01:00	06/30/21 05:21	121,5540C	AW
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1518674-1										
Chloride	ND		mg/l	1.0	--	1	-	06/30/21 10:08	121,4500CL-E	MR
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1521756-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	07/08/21 11:30	07/09/21 09:20	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1524161-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/15/21 11:00	07/15/21 20:44	121,4500NH3-BH	AT

Lab Control Sample Analysis
Batch Quality Control

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1517957-2								
BOD, 5 day	92		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1518466-2								
Chloride	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1518584-2								
Surfactants, MBAS	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1518674-2								
Chloride	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1521756-2								
Phosphorus, Total	106		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1524161-2								
Nitrogen, Ammonia	102		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1517957-4 QC Sample: L2134985-01 Client ID: 025												
BOD, 5 day	ND	100	94	94		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1518466-4 QC Sample: L2135062-02 Client ID: MS Sample												
Chloride	63	20	81	90		-	-		58-140	-		7
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1518584-4 QC Sample: L2135122-01 Client ID: MS Sample												
Surfactants, MBAS	ND	0.4	0.400	100		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1518674-4 QC Sample: L2135221-03 Client ID: MS Sample												
Chloride	11	20	32	100		-	-		58-140	-		7
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1521756-4 QC Sample: L2132994-07 Client ID: MS Sample												
Phosphorus, Total	0.044	0.5	0.558	103		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1524161-4 QC Sample: L2135037-05 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.62	90		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD OUTFALL SAMPLING

Project Number: Not Specified

Lab Number: L2134985

Report Date: 07/16/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1517957-3 QC Sample: L2134985-01 Client ID: 025						
BOD, 5 day	ND	ND	mg/l	NC		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1518466-3 QC Sample: L2135062-02 Client ID: DUP Sample						
Chloride	63	65	mg/l	3		7
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1518584-3 QC Sample: L2135122-01 Client ID: DUP Sample						
Surfactants, MBAS	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1518674-3 QC Sample: L2135221-03 Client ID: DUP Sample						
Chloride	11	11	mg/l	0		7
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1521756-3 QC Sample: L2132994-07 Client ID: DUP Sample						
Phosphorus, Total	0.044	0.044	mg/l	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1524161-3 QC Sample: L2135037-05 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20

Project Name: MILFORD OUTFALL SAMPLING
Project Number: Not Specified

Lab Number: L2134985
Report Date: 07/16/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2134985-01A	Plastic 950ml unpreserved	A	7	7	9.7	Y	Absent		BOD-5210(2)
L2134985-01B	Plastic 120ml unpreserved	A	7	7	9.7	Y	Absent		CL-4500(28)
L2134985-01C	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		E-COLI-QT(.33)
L2134985-01D	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		E-COLI-QT(.33)
L2134985-01E	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		F-COLI-MF(.33)
L2134985-01F	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		F-COLI-MF(.33)
L2134985-01G	Plastic 950ml unpreserved	A	7	7	9.7	Y	Absent		MBAS-5540(2)
L2134985-01H	Plastic 500ml H2SO4 preserved	A	<2	<2	9.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2134985-02A	Plastic 120ml unpreserved	A	7	7	9.7	Y	Absent		CL-4500(28)
L2134985-02B	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		E-COLI-QT(.33)
L2134985-02C	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		E-COLI-QT(.33)
L2134985-02D	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		F-COLI-MF(.33)
L2134985-02E	Plastic 950ml unpreserved	A	7	7	9.7	Y	Absent		MBAS-5540(2)
L2134985-02F	Plastic 500ml H2SO4 preserved	A	<2	<2	9.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2134985-02X	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		F-COLI-MF(.33)
L2134985-03A	Plastic 950ml unpreserved	A	7	7	9.7	Y	Absent		CL-4500(28),MBAS-5540(2)
L2134985-03B	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		E-COLI-QT(.33)
L2134985-03C	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		E-COLI-QT(.33)
L2134985-03D	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		F-COLI-MF(.33)
L2134985-03E	Bacteria Cup Na2S2O3 preserved	A	NA		9.7	Y	Absent		F-COLI-MF(.33)
L2134985-03G	Plastic 500ml H2SO4 preserved	A	<2	<2	9.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2134985
Project Number:	Not Specified	**Report Date:**	07/16/21

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:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2134985
Project Number:	Not Specified	**Report Date:**	07/16/21

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 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

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2134985
Project Number:	Not Specified	**Report Date:**	07/16/21

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.

Project Name:	MILFORD OUTFALL SAMPLING	**Lab Number:**	L2134985
Project Number:	Not Specified	**Report Date:**	07/16/21

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

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: 6/28/21

ALPHA Job #: L2134985

Project Information

Project Name: Milford outfalls
Project Location: Milford, MA
Project #:
Project Manager: Natalie Pomerleshein
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☑ Same as Client info PO #:

Client Information

Client: Environmental Partners
Address: 1900 Crown Colony Dr #402 Quincy MA
Phone: 207 939 3883
Email: aet@envpartners.com nmp@envpartners.com

Regulatory Requirements & Project Information Requirements

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

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Additional Project Information:

MS4

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

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	BOD	Chloride	Total Phos	E coli & Fecal	Surfactants	ammonia	Sample Comments	TOTAL # BOTTLES
34985-01	025	6/28	14:45	water	AT	X	X	X	X	X	X		
02	New 2	↓	15:00	↓	↓		X	X	X	X	X		
03	1106	↓	15:40	↓	↓		X	X	X	X	X		

Container Type																			
Preservative																			

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	6/28 4:23	Molly Desrea	6/28/21 1623

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:	L2141709
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Annie Tucker
Phone:	(617) 657-0973
Project Name:	MILFORD
Project Number:	Not Specified
Report Date:	08/12/21

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: MILFORD
Project Number: Not Specified

Lab Number: L2141709
Report Date: 08/12/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2141709-01	I-2	WATER	Not Specified	08/04/21 14:30	08/04/21
L2141709-02	OF-315	WATER	Not Specified	08/04/21 15:00	08/04/21

Project Name:	MILFORD	**Lab Number:**	L2141709
Project Number:	Not Specified	**Report Date:**	08/12/21

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.

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: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 08/12/21

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD
Project Number: Not Specified

Lab Number: L2141709
Report Date: 08/12/21

SAMPLE RESULTS

Lab ID: L2141709-01
Client ID: I-2
Sample Location: Not Specified

Date Collected: 08/04/21 14:30
Date Received: 08/04/21
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)	150		col/100ml	2.0	NA	2	-	08/04/21 22:11	121,9222D	JW
E. Coli (MPN)	83.92		MPN/100ml	1	NA	1	-	08/04/21 19:15	121,9223B	TL
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 04:00	121,4500CL-D	KA
Nitrogen, Ammonia	0.129		mg/l	0.075	--	1	08/10/21 16:30	08/11/21 15:45	121,4500NH3-BH	JO
Phosphorus, Total	0.017		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:49	121,4500P-E	MC
BOD, 5 day	ND		mg/l	2.0	NA	1	08/04/21 23:40	08/09/21 17:45	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/05/21 03:00	08/05/21 06:25	121,5540C	AW

Project Name: MILFORD
Project Number: Not Specified

Lab Number: L2141709
Report Date: 08/12/21

SAMPLE RESULTS

Lab ID: L2141709-02
Client ID: OF-315
Sample Location: Not Specified

Date Collected: 08/04/21 15:00
Date Received: 08/04/21
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)	500		col/100ml	10	NA	10	-	08/04/21 22:11	121,9222D	JW
E. Coli (MPN)	1046.24		MPN/100ml	1	NA	1	-	08/04/21 19:15	121,9223B	TL
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 04:00	121,4500CL-D	KA
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/10/21 16:30	08/11/21 15:45	121,4500NH3-BH	JO
Phosphorus, Total	0.036		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:51	121,4500P-E	MC
BOD, 5 day	ND		mg/l	2.0	NA	1	08/04/21 23:40	08/09/21 17:45	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/05/21 03:00	08/05/21 06:26	121,5540C	AW

Project Name: MILFORD **Lab Number:** L2141709

Project Number: Not Specified **Report Date:** 08/12/21

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): 01-02 Batch: WG1531644-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	08/04/21 19:15	121,9223B	TL
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1531646-1										
BOD, 5 day	ND		mg/l	2.0	NA	1	08/04/21 23:40	08/09/21 17:45	121,5210B	JD
Microbiological Analysis - Westborough Lab for sample(s): 01-02 Batch: WG1531668-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	08/04/21 22:11	121,9222D	JW
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1531684-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/05/21 03:00	08/05/21 06:22	121,5540C	AW
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1531693-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 04:00	121,4500CL-D	KA
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1532215-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:33	121,4500P-E	MC
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1533563-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/10/21 16:30	08/11/21 15:42	121,4500NH3-BH	JO

Lab Control Sample Analysis
Batch Quality Control

Project Name: MILFORD
Project Number: Not Specified

Lab Number: L2141709
Report Date: 08/12/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1531646-2								
BOD, 5 day	102		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1531684-2								
Surfactants, MBAS	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1531693-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1532215-2								
Phosphorus, Total	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1533563-2								
Nitrogen, Ammonia	106		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD
Project Number: Not Specified

Lab Number: L2141709
Report Date: 08/12/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1531646-4 QC Sample: L2141709-02 Client ID: OF-315												
BOD, 5 day	ND	100	100	106		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1531684-4 QC Sample: L2141709-02 Client ID: OF-315												
Surfactants, MBAS	ND	0.4	0.420	105		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1531693-4 QC Sample: L2141709-02 Client ID: OF-315												
Chlorine, Total Residual	ND	0.25	0.23	92		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1532215-4 QC Sample: L2141569-01 Client ID: MS Sample												
Phosphorus, Total	0.048	0.5	0.519	94		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1533563-4 QC Sample: L2141730-06 Client ID: MS Sample												
Nitrogen, Ammonia	11.3	4	17.5	**155**	Q	-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD

Project Number: Not Specified

Lab Number: L2141709

Report Date: 08/12/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1531646-3 QC Sample: L2141709-02 Client ID: OF-315						
BOD, 5 day	ND	ND	mg/l	NC		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1531684-3 QC Sample: L2141709-02 Client ID: OF-315						
Surfactants, MBAS	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1531693-3 QC Sample: L2141709-01 Client ID: I-2						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1532215-3 QC Sample: L2141569-01 Client ID: DUP Sample						
Phosphorus, Total	0.048	0.043	mg/l	11		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1533563-3 QC Sample: L2141730-06 Client ID: DUP Sample						
Nitrogen, Ammonia	11.3	11.6	mg/l	3		20

Project Name: MILFORD
Project Number: Not Specified

Lab Number: L2141709
Report Date: 08/12/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2141709-01A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		E-COLI-QT(.33)
L2141709-01B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		E-COLI-QT(.33)
L2141709-01C	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		F-COLI-MF(.33)
L2141709-01D	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		F-COLI-MF(.33)
L2141709-01E	Plastic 500ml H2SO4 preserved	A	<2	<2	4.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2141709-01F	Plastic 950ml unpreserved	A	7	7	4.2	Y	Absent		TRC-4500(1),BOD-5210(2)
L2141709-01G	Plastic 950ml unpreserved	A	7	7	4.2	Y	Absent		MBAS-5540(2)
L2141709-02A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		E-COLI-QT(.33)
L2141709-02B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		E-COLI-QT(.33)
L2141709-02C	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		F-COLI-MF(.33)
L2141709-02D	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		F-COLI-MF(.33)
L2141709-02E	Plastic 500ml H2SO4 preserved	A	<2	<2	4.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2141709-02F	Plastic 950ml unpreserved	A	7	7	4.2	Y	Absent		TRC-4500(1),BOD-5210(2)
L2141709-02G	Plastic 950ml unpreserved	A	7	7	4.2	Y	Absent		MBAS-5540(2)

*Values in parentheses indicate holding time in days

Project Name: MILFORD **Lab Number:** L2141709

Project Number: Not Specified **Report Date:** 08/12/21

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:	MILFORD	**Lab Number:**	L2141709
Project Number:	Not Specified	**Report Date:**	08/12/21

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 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

Project Name:	MILFORD	**Lab Number:**	L2141709
Project Number:	Not Specified	**Report Date:**	08/12/21

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.

Project Name:	MILFORD	**Lab Number:**	L2141709
Project Number:	Not Specified	**Report Date:**	08/12/21

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: 8/4/21

ALPHA Job #: L2141709

ALPHA Analytical Laboratories
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 #400 Quincy
Phone: 207 939 3883
Email: aet@envpartners.com
nmp@envpartners.com

Additional Project Information:

MS4

Project Information

Project Name: Milford
Project Location:
Project #:
Project Manager:
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 MS4
☐ 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

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	Surfactants	BOD	TRC	Ammonia	E. coli/Fecal coliform	total Phosphorus	Sample Comments	Total # Bottles
41709-01	I-2	8/4	14:30	Water	AT	X	X	X	X	X	X		7
-02	OF-316	8/4	15:00	Water	AT	X	X	X	X	X	X		7

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

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
Annie Tucker	15:41 8/4/21	[signature]	8/4/21 (8:42)

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

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

ENVIRONMENTAL PARTNERS
— An Apex Company —

TECHNICAL MEMORANDUM

Date: September 7, 2021

To Michael Dean, P.E. – Town Engineer, Town of Milford
Scott Crisafulli – Highway Surveyor, Town of Milford

From Natalie Pommersheim – Project Manager, Environmental Partners

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

Subject FY20 Illicit Discharge Detection & Elimination (IDDE) Wet Weather Sampling
MS4 General Permit Assistance for the Office of Planning & Engineering

This memorandum summarizes the FY20 Wet Weather Investigations, outlined in Task 3 of the Agreement for Professional Engineering Services – MS4 General Permit Assistance for the Office of Planning & Engineering of the Town of Milford.

Wet weather outfall sampling is a requirement of the MS4 General Permit for outfalls within drainage catchments that have at least one (1) System Vulnerability Factor (SVF) identified. The MS4 General Permit includes the following factors as SVFs: a history of sanitary sewer overflows (SSOs), areas with inadequate sanitary sewer level of service, crossings of storm and sanitary sewer alignments, areas needing septic system upgrades, and more.

Under this task, Environmental Partners Group, LLC. (EP) identified SVFs within Milford's MS4 catchments using an updated inventory of SSOs included in the Town's most recent IDDE Plan. EP selected fifteen (15) outfalls within catchments that have historically experienced at least one (1) SSO. These outfalls were then sampled during wet weather over the course of two (2) days on July 9 and August 5, 2021.

The MS4 General Permit requires wet weather sampling to occur during a storm event of sufficient depth or intensity to produce a stormwater discharge. EP used daily precipitation totals from the National Oceanic and Atmospheric Administration (NOAA) rain gauge station near Fenway Drive in Milford (Station ID US1MAWR0001). During the 48 hours prior to the sampling event on July 9, 2021, there was 1.57 inches of rain, and 0.41 inches of rain accumulated throughout the day of sampling. During the sampling event on August 5, 2021, 0.3 inches of rain accumulated throughout the day. During both sampling days, stormwater discharge was flowing through the MS4.

Outfall Sampling and Results

On July 9 and August 5, 2021, EP staff visited fifteen outfalls during wet weather. The locations of all sampled outfalls are shown on Figures 1, 2, and 3 and listed in the table below.

Table 1: Wet Weather Outfall Sampling Locations

Receiving Waterbody	Outfall ID	Approximate Street Address	Sample Date	System Vulnerability Factor (SVF)
Charles River	31	16 E Main St	7/9/2021	2017 Parkhust St SSO occurred in this catchment
	39	43 Beach St	7/9/2021	
	40	35 Beach St	7/9/2021	
	OF-510	33 Parkhurst St	8/5/2021	
	37	222 Central St	7/9/2021	2018 173-250 Main Street SSO occurred in this catchment
Godfrey Brook	102	23 Church St	8/5/2021	2015 West Pine St/Gibon St and 2021 West St/Highland St SSO occurred in this catchment
	OF-101	31 W Fountain St	7/9/21	2019 Colonial Rd SSO and 2021 Jionzo Rd SSO occurred in this catchment
	OF-102		7/9/21	
	OF-103		7/9/21	
	OF-104		7/9/21	
	OF-315	57 West St	7/9/21	2015 West Pine St/Gibon St and 2021 West St/Highland St SSO occurred in this catchment
	OF-503	13 Fordham Dr	7/9/21	2019 Colonial Rd SSO and 2021 Jionzo Rd SSO occurred in this catchment
	OF-504	30 Jionzo Rd	7/9/21	
Littlefield Pond	239	8 Field Pond Rd	8/5/21	2016, 2017, 2018 Purdue St SSOs occurred in this catchment
	OF-238	4 Field Pond Rd	8/5/21	

During wet weather screening on July 9, 2021, EP observed evidence of two (2) active SSOs that were reported to the Town. The first SSO was observed in front of 38 to 30 Jionzo Road at 1PM. EP observed toilet paper and flow coming out of two (2) sewer manholes. The outfall downstream of this SSO is outfall OF-504, which EP sampled. The second SSO was observed at the junction of Highland Street and West Street at 2:55 PM. EP observed flow and toilet paper remnants coming up out of a sewer manhole in the middle of the intersection. The downstream outfall that EP sampled was outfall OF-315.

Of the fifteen outfalls sampled during wet weather, fourteen of them resulted in elevated bacteria concentrations of E. coli and fecal coliform greater than their respective thresholds, which is indicative of urban stormwater. Additionally, samples from outfalls OF-504 and 37 resulted in pH values outside the regulated threshold. At OF-504, surfactants were also detected at 0.30 mg/L, above the threshold of 0.25 mg/L. Outfall 37 resulted in an ammonia as nitrogen concentration of 0.806 mg/L, above the threshold of 0.5 mg/L. The full list of all field and analytical sampling results is shown in Table 2.

Prior to this sampling event, outfalls OF-315 and 40 were found to be flowing during dry weather and sampled:

- In May 2018, OF-315 was sampled during dry weather for the same field and analytical parameters as was sampled in this wet weather sampling round. During dry weather, OF-315 did not have any results outside regulated thresholds.
- In June 2019, outfall 40 was sampled during dry weather and resulted in an E. coli concentration of 770.1 Most Probable Number (MPN)/100 mL, greater than the threshold of 126 MPN/100 mL. Wet weather sampling at outfall 40 resulted in an elevated E. coli level of 3,698 mg/L. EP conducted a dry weather catchment investigation for outfall 40 (located off Beach Street) on August 3, 2021 and found no signs of likely sewer input.

Conclusions & Recommendations

According the MS4 Permit (Section 2.3.4.8a), “likely sewer input” indicators must consist of the following scenarios:

1. Olfactory or visual evidence of sewage,
2. 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
3. Ammonia >/= 0.5 mg/L, surfactants >/= 0.25 mg/L, and detectable levels of chlorine.

If an outfall has indicators of likely sewer input, then it must be ranked as a problem outfall. Outfall OF-504 was downstream of the active SSO on Jionzo Street, and EP observed olfactory evidence of sewage at that structure. Therefore, outfall OF-504 is now a problem outfall and is recommended for further evaluation.

The remaining fourteen outfalls that were sampled did not meet the criteria listed above, and the elevated bacteria levels could be attributed to other factors (animal waste, waterfowl, pipe maintenance, etc.).

EP recommends the following:

- Milford should rank outfall OF-504 as a problem outfall and peruse additional IDDE investigation.
- Milford should prioritize the remaining fourteen outfalls for IDDE catchment investigations.
- Milford should complete their inventory of SVFs to determine which additional outfalls are located within catchments that have at least one (1) SVF and thus require wet weather sampling.

Attachments

Certification Page

Figure 1: Wet Weather Outfall Sampling Locations

Figure 2: Wet Weather Outfall Sampling Locations

Figure 3: Wet Weather Outfall Sampling Locations

Table 1: Wet Weather Outfall Sampling Locations (embedded within memorandum text)

Table 2: Stormwater Field Screening and Analytical Results

Laboratory Analytical Results

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

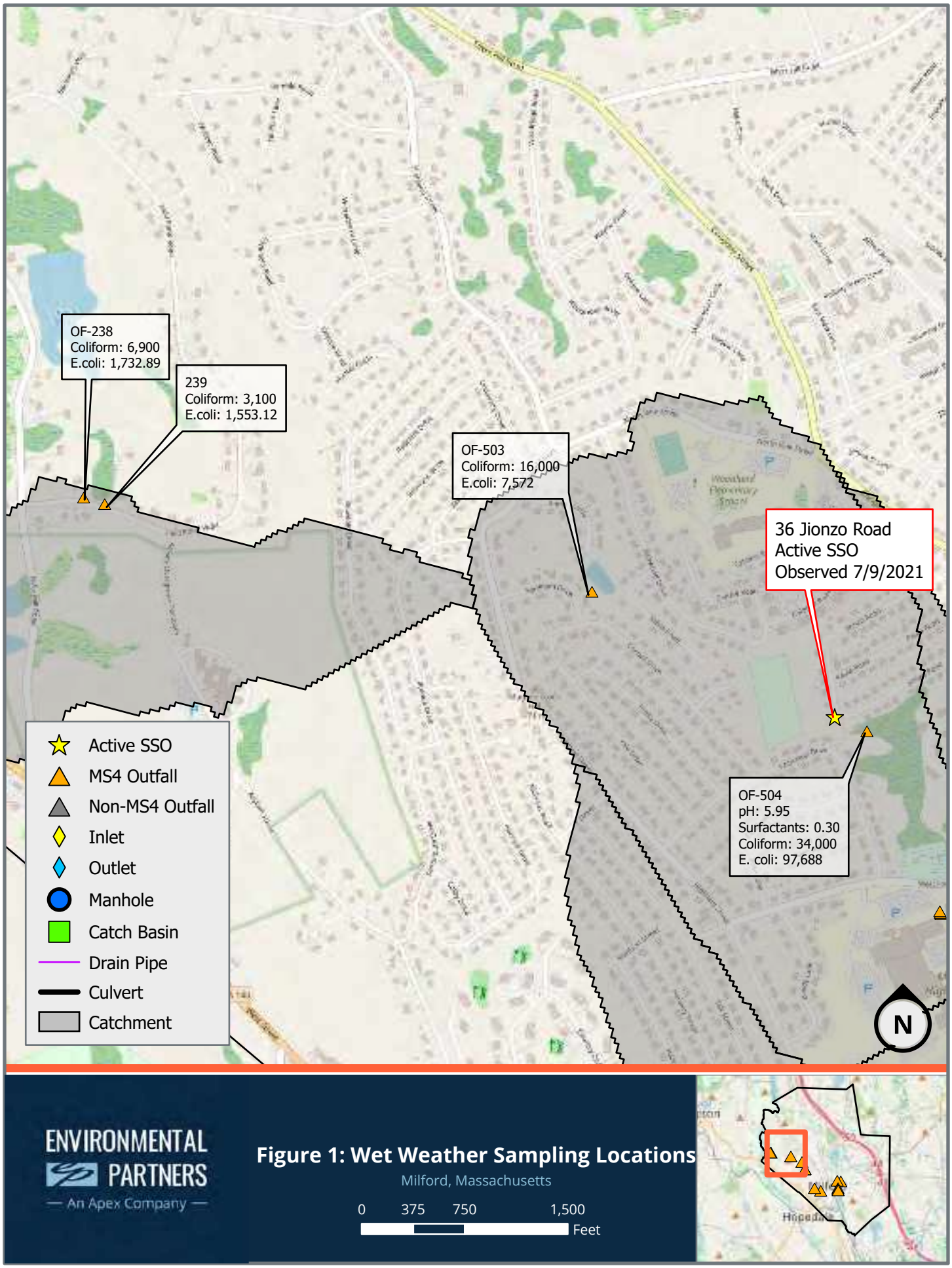
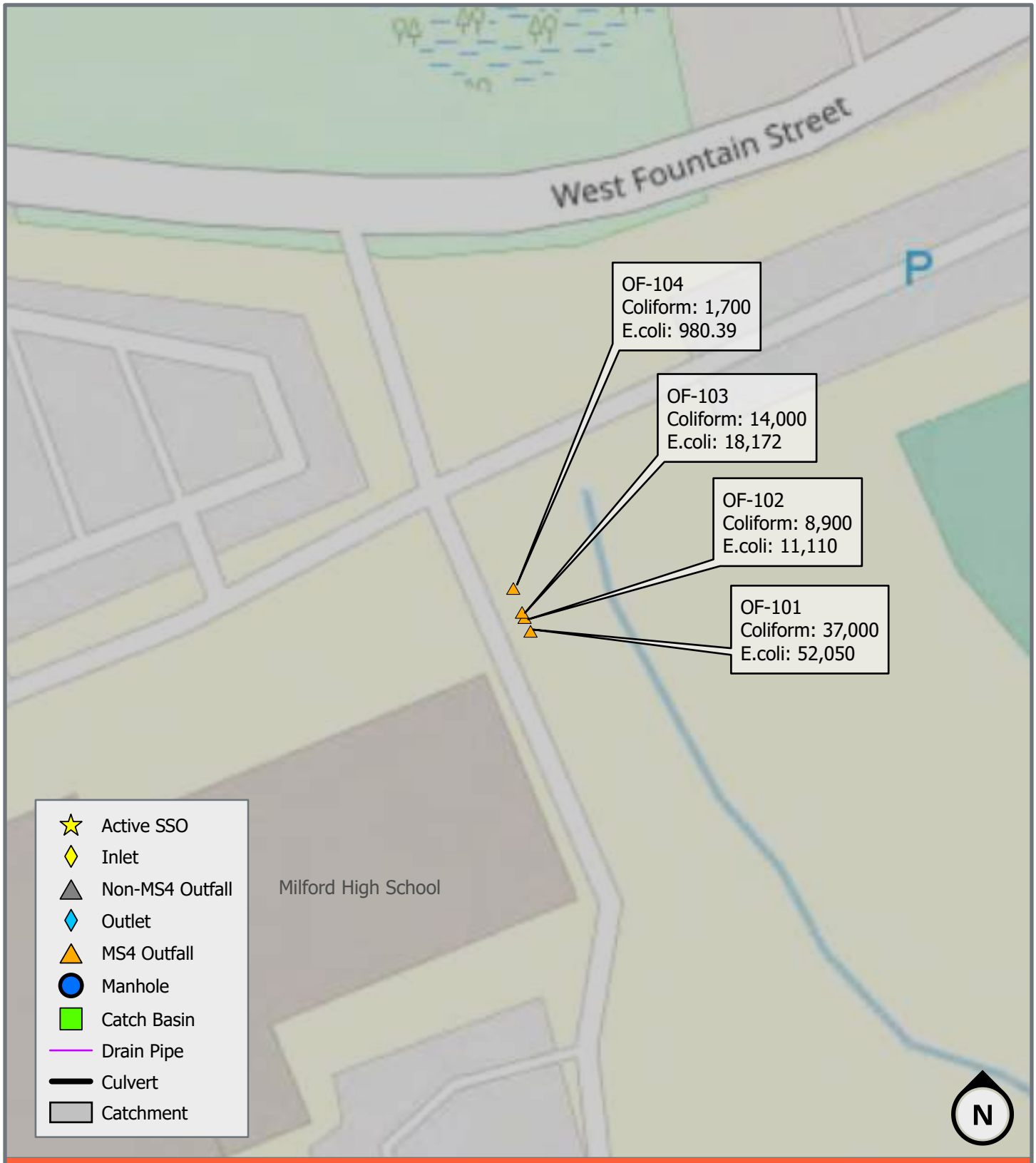


Figure 1: Wet Weather Sampling Locations

Milford, Massachusetts

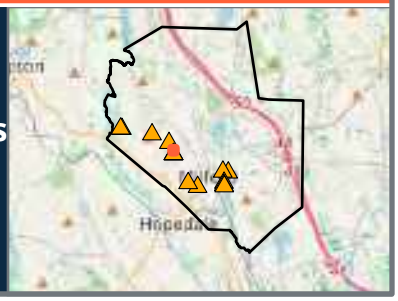


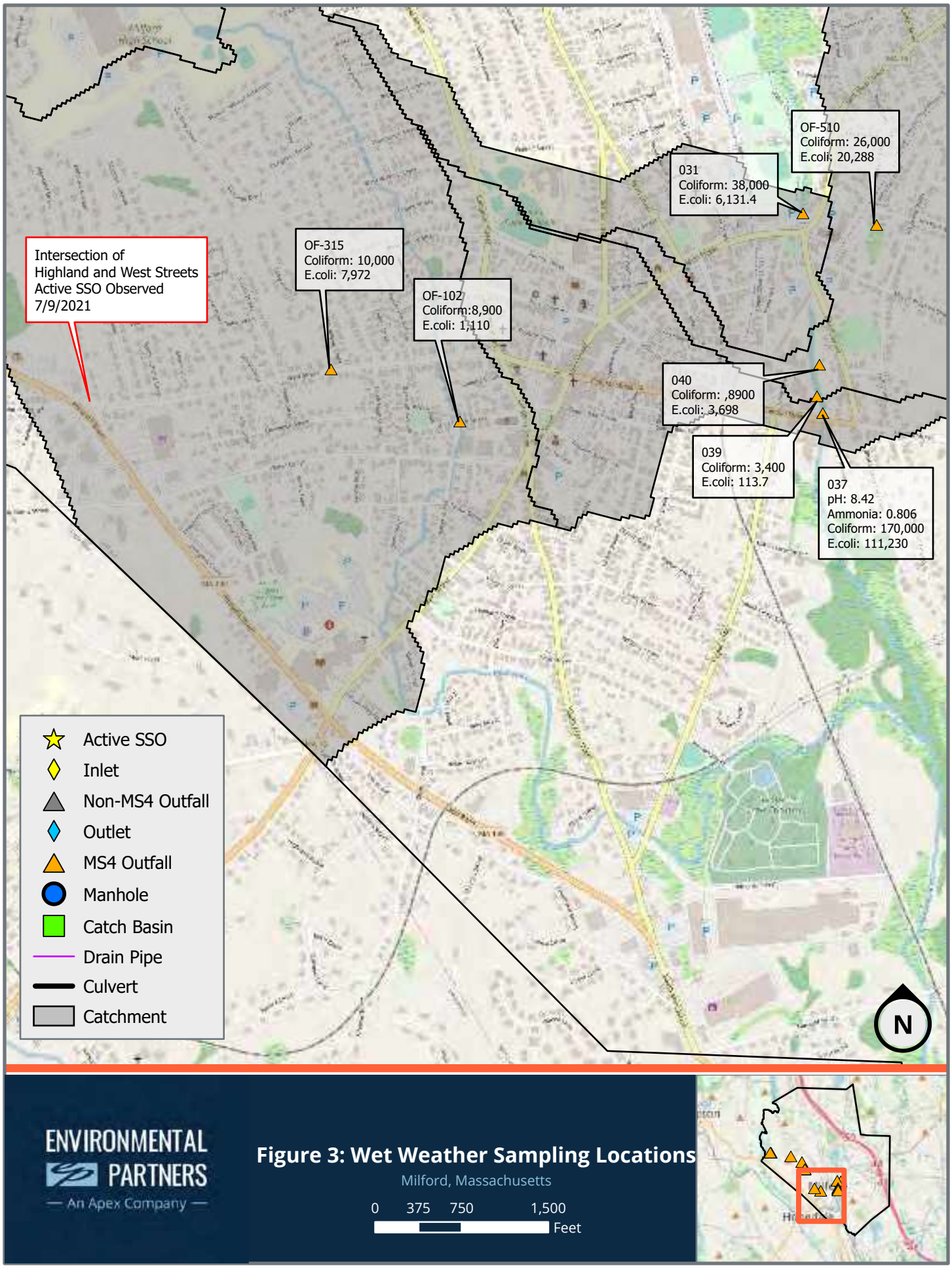
ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 2: Wet Weather Sampling Locations

Milford, Massachusetts

0 37.5 75 150 Feet





ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 3: Wet Weather Sampling Locations

Milford, Massachusetts

0 375 750 1,500 Feet

Table 2: Stormwater Wet Weather Field Screening and Analytical Results
Milford, MA
September 3, 2021

Outfall Identification		OF-103	OF-104	OF-504	OF-503	OF-315	37	39	40	31
Discharge Waterbody		Godfrey Brook	Godfrey Brook	Godfrey Brook	Godfrey Brook	Godfrey Brook	Charles River	Charles River	Charles River	Charles River
Date Sampled		7/9/2021	7/9/2021	7/9/2021	7/9/2021	7/9/2021	7/9/2021	7/9/2021	7/9/2021	7/9/2021
Sample Time		12:42 PM	12:25 PM	1:50 PM	2:25 PM	2:55 PM	9:25 AM	9:35 AM	10:25 AM	11:00 AM
Field Test Results	**Threshold**									
Temperature (˚C)		19.70	20.18	20.26	20.13	20.49	20.1	20.04	17.5	20.43
Specific Conductance (µS/cm)	2000 µS/cm	87	76	163	93	182	259	150	65	4
Salinity (ppt)		0.05	0.04	0.08	0.05	0.09	0.14	0.08	0.03	0
DO (mg/L)		7.35	7.48	3.42	8.50	7.01	7.04	7.97	6.90	7.39
pH	6.5-8.0	6.42	6.68	**5.95**	7.44	7.27	**8.42**	7.46	7.1	6.54
Analytical Results										
Total Residual Chlorine (mg/L)	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia as Nitrogen (mg/L)	0.5 mg/L	0.122	ND	0.387	0.089	0.193	**0.806**	0.116	ND	ND
Phosphorous, Total (mg/L)		0.10	0.038	0.21	0.102	0.165	0.34	0.062	0.15	0.258
BOD, 5 Day (mg/L)		-	-	13.0	-	10	20	4	8.6	6.7
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	ND	**0.30**	0.05	ND	ND	ND	ND	ND
Coliform, Fecal (MF, (col/100mL)		14000.00	1700	34000.0	16000	10000	170000	3400	8900	38000
E. coli (MPN/100 mL)	236 MPN/100 mL	**18172.00**	**980.39**	**97688.0**	**7572**	**7972**	**111230**	113.7	**3698**	**6131.4**

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

Table 2: Stormwater Wet Weather Field Screening and Analytical Results
Milford, MA
September 3, 2021

Outfall Identification		OF-101	OF-102	OF-510	OF-238	239	102
Discharge Waterbody		Godfrey Brook	Godfrey Brook	Charles River	Littlefield Pond	Littlefield Pond	Godfrey Brook
Date Sampled		7/9/2021	7/9/2021	8/5/2021	8/5/2021	8/5/2021	8/5/2021
Sample Time		11:50 AM	11:55 AM	9:55 AM	10:25 AM	10:30 AM	11:20 AM
Field Test Results	**Threshold**						
Temperature (˚C)		19.37	19.57	19.4	20.2	20	24.4
Specific Conductance (µS/cm)	2000 µS/cm	9	71	142	35.7	16.6	20.7
Salinity (ppt)		0	0.04	0.07	0.02	0.01	0.01
DO (mg/L)		8.00	7.69	6.57	7.04	6.90	8.81
pH	6.5-8.0	6.64	6.54	6.94	6.8	6.67	6.96
Analytical Results							
Total Residual Chlorine (mg/L)	-	ND	ND	ND	ND	ND	ND
Ammonia as Nitrogen (mg/L)	0.5 mg/L	ND	ND	0.133	0.105	ND	0.078
Phosphorous, Total (mg/L)		0.096	0.024	0.096	0.096	0.131	0.087
BOD, 5 Day (mg/L)		-	-	2.3	-	-	2.7
Surfactants, MBAS (mg/L)	0.25 mg/L	ND	ND	0.07	0.07	ND	0.06
Coliform, Fecal (MF, (col/100mL)		37000	8900	26000	6900	3100	7300
E. coli (MPN/100 mL)	236 MPN/100 mL	**52050**	**11110**	**20288**	**1732.89**	**1553.12**	**6902**

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

ANALYTICAL REPORT

Lab Number:	L2137082
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Annie Tucker
Phone:	(617) 657-0973
Project Name:	MILFORD WET WEATHER
Project Number:	R311-2001.00
Report Date:	08/03/21

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: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2137082-01	OF-103	WATER	TOWN OF MILFORD	07/09/21 12:15	07/09/21
L2137082-02	OF-104	WATER	TOWN OF MILFORD	07/09/21 12:25	07/09/21
L2137082-03	OF-5004	WATER	TOWN OF MILFORD	07/09/21 13:50	07/09/21
L2137082-04	OF-5003	WATER	TOWN OF MILFORD	07/09/21 14:25	07/09/21
L2137082-05	OF-315	WATER	TOWN OF MILFORD	07/09/21 14:55	07/09/21

Project Name: MILFORD WET WEATHER **Lab Number:** L2137082
Project Number: R311-2001.00 **Report Date:** 08/03/21

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.

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: 08/03/21

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2137082-01
Client ID: OF-103
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 12:15
Date Received: 07/09/21
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)	14000		col/100ml	100	NA	100	-	07/09/21 20:00	121,9222D	JT
E. Coli (MPN)	18172		MPN/100ml	200	NA	200	-	07/09/21 20:07	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 22:16	121,4500CL-D	AS
Nitrogen, Ammonia	0.122		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:15	121,4500NH3-BH	AT
Phosphorus, Total	0.100		mg/l	0.010	--	1	07/21/21 12:05	07/22/21 13:25	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:32	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2137082-02
Client ID: OF-104
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 12:25
Date Received: 07/09/21
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)	1700		col/100ml	10	NA	10	-	07/09/21 20:00	121,9222D	JT
E. Coli (MPN)	980.39		MPN/100ml	1	NA	1	-	07/09/21 20:07	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 22:16	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:16	121,4500NH3-BH	AT
Phosphorus, Total	0.038		mg/l	0.010	--	1	07/21/21 12:05	07/22/21 13:26	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:33	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2137082-03
Client ID: OF-5004
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 13:50
Date Received: 07/09/21
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)	34000		col/100ml	100	NA	100	-	07/09/21 20:00	121,9222D	JT
E. Coli (MPN)	97688		MPN/100ml	200	NA	200	-	07/09/21 20:07	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 22:16	121,4500CL-D	AS
Nitrogen, Ammonia	0.387		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:20	121,4500NH3-BH	AT
Phosphorus, Total	0.210		mg/l	0.010	--	1	07/21/21 12:05	07/22/21 13:27	121,4500P-E	SD
BOD, 5 day	13.		mg/l	2.0	NA	1	07/09/21 23:45	07/14/21 17:20	121,5210B	JD
Surfactants, MBAS	0.300		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:34	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2137082-04
Client ID: OF-5003
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 14:25
Date Received: 07/09/21
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)	16000		col/100ml	100	NA	100	-	07/09/21 20:00	121,9222D	JT
E. Coli (MPN)	7572		MPN/100ml	200	NA	200	-	07/09/21 20:07	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 22:16	121,4500CL-D	AS
Nitrogen, Ammonia	0.089		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:21	121,4500NH3-BH	AT
Phosphorus, Total	0.102		mg/l	0.010	--	1	07/21/21 12:05	07/22/21 13:29	121,4500P-E	SD
Surfactants, MBAS	0.050		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:36	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2137082-05
Client ID: OF-315
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 14:55
Date Received: 07/09/21
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)	10000		col/100ml	100	NA	100	-	07/09/21 20:00	121,9222D	JT
E. Coli (MPN)	7972		MPN/100ml	200	NA	200	-	07/09/21 20:07	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 22:16	121,4500CL-D	AS
Nitrogen, Ammonia	0.193		mg/l	0.075	--	1	08/02/21 18:00	08/02/21 23:51	121,4500NH3-BH	AT
Phosphorus, Total	0.165		mg/l	0.010	--	1	07/21/21 12:05	07/22/21 13:30	121,4500P-E	SD
BOD, 5 day	10.		mg/l	2.0	NA	1	07/09/21 23:45	07/14/21 17:20	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:37	121,5540C	KA

Project Name: MILFORD WET WEATHER **Lab Number:** L2137082

Project Number: R311-2001.00 **Report Date:** 08/03/21

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): 01-05 Batch: WG1522388-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	07/09/21 20:07	121,9223B	JD
Microbiological Analysis - Westborough Lab for sample(s): 01-05 Batch: WG1522390-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	07/09/21 20:00	121,9222D	JT
General Chemistry - Westborough Lab for sample(s): 03,05 Batch: WG1522401-1										
BOD, 5 day	ND		mg/l	2.0	NA	1	07/09/21 23:45	07/14/21 17:20	121,5210B	JD
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1522407-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 22:16	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1522419-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:13	121,5540C	KA
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1526313-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	07/21/21 12:05	07/22/21 13:11	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1530058-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:08	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 05 Batch: WG1530692-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/02/21 18:00	08/02/21 23:35	121,4500NH3-BH	AT

Lab Control Sample Analysis
Batch Quality Control

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00
Lab Number: L2137082
Report Date: 08/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03,05 Batch: WG1522401-2								
BOD, 5 day	111		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1522407-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1522419-2								
Surfactants, MBAS	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1526313-2								
Phosphorus, Total	110		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1530058-2								
Nitrogen, Ammonia	104		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1530692-2								
Nitrogen, Ammonia	106		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03,05 QC Batch ID: WG1522401-4 QC Sample: L2137062-01 Client ID: MS Sample												
BOD, 5 day	ND	100	140	137		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1522407-4 QC Sample: L2137082-02 Client ID: OF-104												
Chlorine, Total Residual	ND	0.25	0.25	100		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1522419-4 QC Sample: L2137082-03 Client ID: OF-5004												
Surfactants, MBAS	0.300	0.4	0.720	105		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1526313-4 QC Sample: L2135987-01 Client ID: MS Sample												
Phosphorus, Total	2.84	1	3.97	113		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1530058-4 QC Sample: L2137031-01 Client ID: MS Sample												
Nitrogen, Ammonia	1.36	4	5.48	103		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1530692-4 QC Sample: L2137708-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.134	4	4.12	100		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD WET WEATHER

Project Number: R311-2001.00

Lab Number: L2137082

Report Date: 08/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03,05 QC Batch ID: WG1522401-3 QC Sample: L2137062-01 Client ID: DUP Sample						
BOD, 5 day	ND	ND	mg/l	NC		35
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1522407-3 QC Sample: L2137082-01 Client ID: OF-103						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1522419-3 QC Sample: L2137082-03 Client ID: OF-5004						
Surfactants, MBAS	0.300	0.340	mg/l	13		32
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1526313-3 QC Sample: L2135987-01 Client ID: DUP Sample						
Phosphorus, Total	2.84	2.67	mg/l	6		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1530058-3 QC Sample: L2137031-01 Client ID: DUP Sample						
Nitrogen, Ammonia	1.36	1.42	mg/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1530692-3 QC Sample: L2137708-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.134	0.158	mg/l	16		20

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2137082-01A	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-01B	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-01C	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-01D	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-01E	Plastic 120ml unpreserved	A	7	7	3.7	Y	Absent		MBAS-5540(2)
L2137082-01F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2137082-01G	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2137082-02A	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-02B	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-02C	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-02D	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-02E	Plastic 120ml unpreserved	A	7	7	3.7	Y	Absent		MBAS-5540(2)
L2137082-02F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2137082-02G	Plastic 500ml unpreserved	A	7	7	3.7	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2137082-03A	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-03B	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-03C	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-03D	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-03E	Plastic 120ml unpreserved	A	7	7	3.7	Y	Absent		MBAS-5540(2)
L2137082-03F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2137082-03G	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2137082-03H	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		BOD-5210(2)
L2137082-04A	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)

*Values in parentheses indicate holding time in days

Project Name: MILFORD WET WEATHER
Project Number: R311-2001.00

Lab Number: L2137082
Report Date: 08/03/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2137082-04B	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-04C	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-04D	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-04E	Plastic 120ml unpreserved	A	7	7	3.7	Y	Absent		MBAS-5540(2)
L2137082-04F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2137082-04G	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2137082-05A	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-05B	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		E-COLI-QT(.33)
L2137082-05C	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-05D	Bacteria Cup Na2S2O3 preserved	A	NA		3.7	Y	Absent		F-COLI-MF(.33)
L2137082-05E	Plastic 120ml unpreserved	A	7	7	3.7	Y	Absent		MBAS-5540(2)
L2137082-05F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2137082-05G	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2137082-05H	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		BOD-5210(2)

*Values in parentheses indicate holding time in days

Project Name: MILFORD WET WEATHER **Lab Number:** L2137082

Project Number: R311-2001.00 **Report Date:** 08/03/21

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:	MILFORD WET WEATHER	**Lab Number:**	L2137082
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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

Project Name:	MILFORD WET WEATHER	**Lab Number:**	L2137082
Project Number:	R311-2001.00	**Report Date:**	08/03/21

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.

Project Name: MILFORD WET WEATHER **Lab Number:** L2137082
Project Number: R311-2001.00 **Report Date:** 08/03/21

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: 7/9/21

ALPHA Job #: L2137082

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 #402
Quincy MA
Phone: 207-939-3883
Email: AET@envpartners.com

Project Information

Project Name: Milford wet weather '21
Project Location: Town of Milford
Project #: R311-2001.00
Project Manager:
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 _____

Additional Project Information:

MS4

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

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Surfactants	BOD	Total Residual Chlorine	Ammonia	E Coli + Fecal Coliform	Total Phosphorus	Sample Comments	TOTAL # BOTTLES
37082-01	OF-103	7/9	12:15	Water	AET	X		X	X	X	X		
-02	OF-104	↓	12:25	↓	↓	X		X	X	X	X		
-03	OF-5004	7/9	13:50	Water	AET	X	X	X	X	X	X		
-04	OF-5003	7/9	14:25	Water	AET	X		X	X	X	X		
-05	OF-815	7/9	14:55	Water	AET	X	X	X	X	X	X		

Container Type																	
Preservative																	

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	15:27 7/9	[signature]	7/9/21 1527
[signature]	7/9/21 1835	[signature]	7/9/21 1835

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:	L2136971
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Annie Tucker
Phone:	(617) 657-0973
Project Name:	MILFORD WET WEATHER
Project Number:	R311-2001
Report Date:	08/03/21

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: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2136971-01	037	WATER	TOWN OF MILFORD	07/09/21 09:25	07/09/21
L2136971-02	039	WATER	TOWN OF MILFORD	07/09/21 09:35	07/09/21
L2136971-03	040	WATER	TOWN OF MILFORD	07/09/21 10:25	07/09/21
L2136971-04	031	WATER	TOWN OF MILFORD	07/09/21 11:00	07/09/21
L2136971-05	OF-101	WATER	TOWN OF MILFORD	07/09/21 11:50	07/09/21
L2136971-06	OF-102	WATER	TOWN OF MILFORD	07/09/21 11:55	07/09/21

Project Name:	MILFORD WET WEATHER	**Lab Number:**	L2136971
Project Number:	R311-2001	**Report Date:**	08/03/21

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: MILFORD WET WEATHER **Lab Number:** L2136971
Project Number: R311-2001 **Report Date:** 08/03/21

Case Narrative (continued)

Nitrogen, Ammonia

L2136971-03: The sample has an elevated detection limit due to the dilution required by the sample matrix.

Coliform, Fecal (MF)

L2136971-04 and -05: The result is estimated due to the elevated concentration in the sample. Due to the expiration of the method required holding time, re-analysis could not be performed.

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: 08/03/21

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2136971-01
Client ID: 037
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 09:25
Date Received: 07/09/21
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)	170000		col/100ml	1000	NA	1000	-	07/09/21 16:45	121,9222D	JT
E. Coli (MPN)	111230		MPN/100ml	1000	NA	1000	-	07/09/21 15:30	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
Nitrogen, Ammonia	0.806		mg/l	0.375	--	5	07/30/21 18:30	08/02/21 20:43	121,4500NH3-BH	AT
Phosphorus, Total	0.340		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:34	121,4500P-E	SD
BOD, 5 day	20.		mg/l	2.0	NA	1	07/09/21 19:40	07/14/21 16:20	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:16	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2136971-02
Client ID: 039
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 09:35
Date Received: 07/09/21
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)	3400		col/100ml	100	NA	100	-	07/09/21 16:45	121,9222D	JT
E. Coli (MPN)	113.7		MPN/100ml	1	NA	1	-	07/09/21 15:30	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
Nitrogen, Ammonia	0.116		mg/l	0.075	--	1	07/30/21 18:30	08/02/21 20:43	121,4500NH3-BH	AT
Phosphorus, Total	0.062		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:35	121,4500P-E	SD
BOD, 5 day	4.0		mg/l	2.0	NA	1	07/09/21 19:40	07/14/21 16:20	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:17	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2136971-03
Client ID: 040
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 10:25
Date Received: 07/09/21
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)	8900		col/100ml	100	NA	100	-	07/09/21 16:45	121,9222D	JT
E. Coli (MPN)	3698		MPN/100ml	200	NA	200	-	07/09/21 15:30	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.150	--	2	07/30/21 18:30	08/02/21 20:44	121,4500NH3-BH	AT
Phosphorus, Total	0.150		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:36	121,4500P-E	SD
BOD, 5 day	8.6		mg/l	2.0	NA	1	07/09/21 19:40	07/14/21 16:20	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:18	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2136971-04
Client ID: 031
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 11:00
Date Received: 07/09/21
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)	38000		col/100ml	100	NA	100	-	07/09/21 16:45	121,9222D	JT
E. Coli (MPN)	6131.4		MPN/100ml	10	NA	10	-	07/09/21 15:30	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:24	121,4500NH3-BH	AT
Phosphorus, Total	0.258		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:37	121,4500P-E	SD
BOD, 5 day	6.7		mg/l	2.0	NA	1	07/09/21 19:40	07/14/21 16:20	121,5210B	JD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:18	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2136971-05
Client ID: OF-101
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 11:50
Date Received: 07/09/21
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)	37000		col/100ml	100	NA	100	-	07/09/21 16:45	121,9222D	JT
E. Coli (MPN)	52050		MPN/100ml	200	NA	200	-	07/09/21 15:30	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:25	121,4500NH3-BH	AT
Phosphorus, Total	0.096		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:38	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:19	121,5540C	KA

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

SAMPLE RESULTS

Lab ID: L2136971-06
Client ID: OF-102
Sample Location: TOWN OF MILFORD

Date Collected: 07/09/21 11:55
Date Received: 07/09/21
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)	8900		col/100ml	100	NA	100	-	07/09/21 16:45	121,9222D	JT
E. Coli (MPN)	11110		MPN/100ml	200	NA	200	-	07/09/21 15:30	121,9223B	JD
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:26	121,4500NH3-BH	AT
Phosphorus, Total	0.024		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:40	121,4500P-E	SD
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:20	121,5540C	KA

Project Name: MILFORD WET WEATHER **Lab Number:** L2136971

Project Number: R311-2001 **Report Date:** 08/03/21

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): 01-06 Batch: WG1522292-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	07/09/21 15:30	121,9223B	JD
Microbiological Analysis - Westborough Lab for sample(s): 01-06 Batch: WG1522293-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	07/09/21 16:45	121,9222D	JT
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1522342-1										
BOD, 5 day	ND		mg/l	2.0	NA	1	07/09/21 19:40	07/14/21 16:20	121,5210B	JD
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1522374-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	07/09/21 18:56	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1522419-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	07/10/21 00:01	07/10/21 05:13	121,5540C	KA
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1526235-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	07/21/21 09:00	07/21/21 13:19	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1530010-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/30/21 18:30	08/02/21 20:36	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 04-06 Batch: WG1530058-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/31/21 04:31	08/02/21 21:08	121,4500NH3-BH	AT

Lab Control Sample Analysis
Batch Quality Control

Project Name: MILFORD WET WEATHER
Project Number: R311-2001
Lab Number: L2136971
Report Date: 08/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1522342-2								
BOD, 5 day	106		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1522374-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1522419-2								
Surfactants, MBAS	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1526235-2								
Phosphorus, Total	110		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1530010-2								
Nitrogen, Ammonia	104		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 04-06 Batch: WG1530058-2								
Nitrogen, Ammonia	104		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1522342-4 QC Sample: L2136795-02 Client ID: MS Sample												
BOD, 5 day	ND	100	130	130		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1522374-4 QC Sample: L2136963-02 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.20	80		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1522419-4 QC Sample: L2137082-03 Client ID: MS Sample												
Surfactants, MBAS	0.300	0.4	0.720	105		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1526235-4 QC Sample: L2136958-01 Client ID: MS Sample												
Phosphorus, Total	0.158	0.5	0.665	101		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1530010-4 QC Sample: L2136923-02 Client ID: MS Sample												
Nitrogen, Ammonia	7.45	4	10.5	**76**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 04-06 QC Batch ID: WG1530058-4 QC Sample: L2137031-01 Client ID: MS Sample												
Nitrogen, Ammonia	1.36	4	5.48	103		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD WET WEATHER

Project Number: R311-2001

Lab Number: L2136971

Report Date: 08/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1522342-3 QC Sample: L2136795-02 Client ID: DUP Sample						
BOD, 5 day	ND	ND	mg/l	NC		35
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1522374-3 QC Sample: L2136963-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1522419-3 QC Sample: L2137082-03 Client ID: DUP Sample						
Surfactants, MBAS	0.300	0.340	mg/l	13		32
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1526235-3 QC Sample: L2136958-01 Client ID: DUP Sample						
Phosphorus, Total	0.158	0.154	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1530010-3 QC Sample: L2136923-02 Client ID: DUP Sample						
Nitrogen, Ammonia	7.45	7.69	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 04-06 QC Batch ID: WG1530058-3 QC Sample: L2137031-01 Client ID: DUP Sample						
Nitrogen, Ammonia	1.36	1.42	mg/l	4		20

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2136971-01A	Plastic 120ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2136971-01B	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-01C	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-01D	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-01E	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-01F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.0	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2136971-01G	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2136971-01H	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2136971-02A	Plastic 120ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),BOD-5210(2),MBAS-5540(2)
L2136971-02B	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-02C	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-02D	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-02E	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-02F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.0	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2136971-02G	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),BOD-5210(2),MBAS-5540(2)
L2136971-02H	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),BOD-5210(2),MBAS-5540(2)
L2136971-03A	Plastic 120ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2136971-03B	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-03C	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-03D	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-03E	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-03F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.0	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2136971-03G	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)

*Values in parentheses indicate holding time in days

Project Name: MILFORD WET WEATHER
Project Number: R311-2001

Lab Number: L2136971
Report Date: 08/03/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2136971-03H	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2136971-04A	Plastic 120ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),BOD-5210(2),MBAS-5540(2)
L2136971-04B	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-04C	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-04D	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-04E	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-04F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.0	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2136971-04G	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),BOD-5210(2),MBAS-5540(2)
L2136971-04H	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),BOD-5210(2),MBAS-5540(2)
L2136971-05A	Plastic 120ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2136971-05B	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-05C	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-05D	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-05E	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-05F	Plastic 500ml H2SO4 preserved	A	<2	<2	3.0	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2136971-05G	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2136971-06A	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-06B	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		F-COLI-MF(.33)
L2136971-06C	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-06D	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		E-COLI-QT(.33)
L2136971-06E	Plastic 500ml H2SO4 preserved	A	<2	<2	3.0	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2136971-06F	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2136971-06G	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		TRC-4500(1),MBAS-5540(2)

*Values in parentheses indicate holding time in days

Project Name: MILFORD WET WEATHER **Lab Number:** L2136971

Project Number: R311-2001 **Report Date:** 08/03/21

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:	MILFORD WET WEATHER	**Lab Number:**	L2136971
Project Number:	R311-2001	**Report Date:**	08/03/21

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 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

Project Name:	MILFORD WET WEATHER	**Lab Number:**	L2136971
Project Number:	R311-2001	**Report Date:**	08/03/21

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: MILFORD WET WEATHER **Lab Number:** L2136971
Project Number: R311-2001 **Report Date:** 08/03/21

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

ALPHA Analytical Laboratories
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: 7/9/21

ALPHA Job #: L2136971

Project Information

Project Name: Milford Wet Weather

Project Location: Town of Milford

Project #: R311-2001

Project Manager:

ALPHA Quote #:

Report Information - Data Deliverables

☑ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: ~~Town of Milford~~ Environmental Partners

Address: 1900 Crown Colony Suite #402 Quincy, MA

Phone: 207-939-3883

Email: aet@envpartners.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods

☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)

☑ Yes ☐ No NPDES RGP

☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Additional Project Information:

MS4

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	E. coli	Fecal coliforms	Surfactants	BOD	Total Residual Chlorine	Ammonia	Total Phosphorus	Sample Comments	TOTAL # BOTTLES
36971-01	037	7/9	9:25	water	AET	X	X	X	X	X	X			
-02	039	7/9	9:35	water	AET	X	X	X	X	X	X			
-03	040	7/9	10:25	water	AET	X	X	X	X	X	X			
-04	031	7/9	11:00	water	AET	X	X	X	X	X	X			
-05	OF-101	7/9	11:50	water	AET	X	X		X	X	X			
-06	OF-102	7/9	11:55	water	AET	X	X		X	X	X			

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do

Preservation
☐ Lab to do

Container Type														
Preservative														

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
Chuck Tucker	7/9/21 12:00	Tom Handley Hudderson	7/9/21 1205
T. Hudderson	7/9/21 1200	[illegible]	7/9/21 1200

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:	L2141865
Client:	Environmental Partners 1900 Crown Colony Drive Suite 402 4th Floor Quincy, MA 02169
ATTN:	Annie Tucker
Phone:	(617) 657-0973
Project Name:	MILFORD WET WEATHER DAY 2
Project Number:	Not Specified
Report Date:	08/13/21

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: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2141865-01	OF-76	WATER	TOWN OF MILFORD	08/05/21 09:55	08/05/21
L2141865-02	OF-238	WATER	TOWN OF MILFORD	08/05/21 10:25	08/05/21
L2141865-03	239	WATER	TOWN OF MILFORD	08/05/21 10:30	08/05/21
L2141865-04	102	WATER	TOWN OF MILFORD	08/05/21 11:20	08/05/21

Project Name:	MILFORD WET WEATHER DAY 2	**Lab Number:**	L2141865
Project Number:	Not Specified	**Report Date:**	08/13/21

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.

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: Caitlin Walukevich Caitlin Walukevich

Title: Technical Director/Representative Date: 08/13/21

INORGANICS
&
MISCELLANEOUS

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

SAMPLE RESULTS

Lab ID: L2141865-01
Client ID: OF-76
Sample Location: TOWN OF MILFORD

Date Collected: 08/05/21 09:55
Date Received: 08/05/21
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)	26000		col/100ml	100	NA	100	-	08/05/21 14:50	121,9222D	JT
E. Coli (MPN)	20288		MPN/100ml	200	NA	200	-	08/05/21 15:26	121,9223B	JW
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 22:38	121,4500CL-D	AS
Nitrogen, Ammonia	0.133		mg/l	0.075	--	1	08/11/21 06:50	08/12/21 18:34	121,4500NH3-BH	AT
Phosphorus, Total	0.096		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:52	121,4500P-E	MC
BOD, 5 day	2.3		mg/l	2.0	NA	1	08/06/21 13:00	08/11/21 11:30	121,5210B	MT
Surfactants, MBAS	0.070		mg/l	0.050	--	1	08/07/21 04:10	08/07/21 08:49	121,5540C	AW

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

SAMPLE RESULTS

Lab ID: L2141865-02
Client ID: OF-238
Sample Location: TOWN OF MILFORD

Date Collected: 08/05/21 10:25
Date Received: 08/05/21
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)	6900		col/100ml	100	NA	100	-	08/05/21 14:50	121,9222D	JT
E. Coli (MPN)	1732.89		MPN/100ml	1	NA	1	-	08/05/21 15:26	121,9223B	JW
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 22:38	121,4500CL-D	AS
Nitrogen, Ammonia	0.105		mg/l	0.075	--	1	08/11/21 06:50	08/12/21 18:35	121,4500NH3-BH	AT
Phosphorus, Total	0.096		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:53	121,4500P-E	MC
Surfactants, MBAS	0.070		mg/l	0.050	--	1	08/07/21 04:10	08/07/21 08:50	121,5540C	AW

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

SAMPLE RESULTS

Lab ID: L2141865-03
Client ID: 239
Sample Location: TOWN OF MILFORD

Date Collected: 08/05/21 10:30
Date Received: 08/05/21
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)	3100		col/100ml	100	NA	100	-	08/05/21 14:50	121,9222D	JT
E. Coli (MPN)	1553.12		MPN/100ml	1	NA	1	-	08/05/21 15:26	121,9223B	JW
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 22:38	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/11/21 06:50	08/12/21 18:35	121,4500NH3-BH	AT
Phosphorus, Total	0.131		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:56	121,4500P-E	MC
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/07/21 04:10	08/07/21 08:50	121,5540C	AW

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

SAMPLE RESULTS

Lab ID: L2141865-04
Client ID: 102
Sample Location: TOWN OF MILFORD

Date Collected: 08/05/21 11:20
Date Received: 08/05/21
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)	7300		col/100ml	100	NA	100	-	08/05/21 14:50	121,9222D	JT
E. Coli (MPN)	6902		MPN/100ml	200	NA	200	-	08/05/21 15:26	121,9223B	JW
General Chemistry - Westborough Lab										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 22:38	121,4500CL-D	AS
Nitrogen, Ammonia	0.078		mg/l	0.075	--	1	08/11/21 06:50	08/12/21 18:36	121,4500NH3-BH	AT
Phosphorus, Total	0.087		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:57	121,4500P-E	MC
BOD, 5 day	2.7		mg/l	2.0	NA	1	08/06/21 13:00	08/11/21 11:30	121,5210B	MT
Surfactants, MBAS	0.060		mg/l	0.050	--	1	08/07/21 04:10	08/07/21 08:51	121,5540C	AW

Project Name: MILFORD WET WEATHER DAY 2 **Lab Number:** L2141865

Project Number: Not Specified **Report Date:** 08/13/21

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): 01-04 Batch: WG1531965-1										
E. Coli (MPN)	<1		MPN/100ml	1	NA	1	-	08/05/21 15:26	121,9223B	JW
Microbiological Analysis - Westborough Lab for sample(s): 01-04 Batch: WG1531984-1										
Coliform, Fecal (MF)	ND		col/100ml	1.0	NA	1	-	08/05/21 14:50	121,9222D	JT
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1532096-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/05/21 22:38	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1532215-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	08/06/21 08:10	08/06/21 11:33	121,4500P-E	MC
General Chemistry - Westborough Lab for sample(s): 01,04 Batch: WG1532233-1										
BOD, 5 day	ND		mg/l	2.0	NA	1	08/06/21 13:00	08/11/21 11:30	121,5210B	MT
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1532514-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/07/21 04:10	08/07/21 08:46	121,5540C	AW
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1533735-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/11/21 06:50	08/12/21 18:09	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: MILFORD WET WEATHER DAY 2

Project Number: Not Specified

Lab Number: L2141865

Report Date: 08/13/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1532096-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1532215-2								
Phosphorus, Total	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,04 Batch: WG1532233-2								
BOD, 5 day	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1532514-2								
Surfactants, MBAS	106		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1533735-2								
Nitrogen, Ammonia	98		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1532096-4 QC Sample: L2142025-01 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.24	96		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1532215-4 QC Sample: L2141569-01 Client ID: MS Sample												
Phosphorus, Total	0.048	0.5	0.519	94		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01,04 QC Batch ID: WG1532233-4 QC Sample: L2141888-04 Client ID: MS Sample												
BOD, 5 day	4.2	100	95	91		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1532514-4 QC Sample: L2141865-03 Client ID: 239												
Surfactants, MBAS	ND	0.4	0.480	120		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1533735-4 QC Sample: L2141849-01 Client ID: MS Sample												
Nitrogen, Ammonia	0.418	4	4.14	93		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MILFORD WET WEATHER DAY 2

Project Number: Not Specified

Lab Number: L2141865

Report Date: 08/13/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1532096-3 QC Sample: L2142025-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1532215-3 QC Sample: L2141569-01 Client ID: DUP Sample						
Phosphorus, Total	0.048	0.043	mg/l	11		20
General Chemistry - Westborough Lab Associated sample(s): 01,04 QC Batch ID: WG1532233-3 QC Sample: L2141888-04 Client ID: DUP Sample						
BOD, 5 day	4.2	4.6	mg/l	9		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1532514-3 QC Sample: L2141865-03 Client ID: 239						
Surfactants, MBAS	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1533735-3 QC Sample: L2141849-01 Client ID: DUP Sample						
Nitrogen, Ammonia	0.418	0.410	mg/l	2		20

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2141865-01A	Plastic 120ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2141865-01B	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-01C	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-01D	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-01E	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-01F	Plastic 500ml H2SO4 preserved	A	<2	<2	2.3	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2141865-01G	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2141865-01H	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2141865-02A	Plastic 120ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2141865-02B	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-02C	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-02D	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-02E	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-02F	Plastic 500ml H2SO4 preserved	A	<2	<2	2.3	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2141865-02G	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2141865-03A	Plastic 120ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2141865-03B	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-03C	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-03D	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-03E	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-03F	Plastic 500ml H2SO4 preserved	A	<2	<2	2.3	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2141865-03G	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2)
L2141865-04A	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)

*Values in parentheses indicate holding time in days

Project Name: MILFORD WET WEATHER DAY 2
Project Number: Not Specified

Lab Number: L2141865
Report Date: 08/13/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2141865-04B	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		E-COLI-QT(.33)
L2141865-04C	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-04D	Bacteria Cup Na2S2O3 preserved	A	NA		2.3	Y	Absent		F-COLI-MF(.33)
L2141865-04E	Plastic 500ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2141865-04F	Plastic 500ml H2SO4 preserved	A	<2	<2	2.3	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L2141865-04G	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)
L2141865-04H	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TRC-4500(1),MBAS-5540(2),BOD-5210(2)

*Values in parentheses indicate holding time in days

Project Name:	MILFORD WET WEATHER DAY 2	**Lab Number:**	L2141865
Project Number:	Not Specified	**Report Date:**	08/13/21

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.

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Project Number:	Not Specified	**Report Date:**	08/13/21

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 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

Project Name:	MILFORD WET WEATHER DAY 2	**Lab Number:**	L2141865
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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.

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Project Number:	Not Specified	**Report Date:**	08/13/21

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

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: 8/5/21

ALPHA Job #: L2141865

Project Information

Project Name: Milford Wet Weather Day 2

Project Location:

Project #:

Project Manager:

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 #:

Client Information

Client: Environmental Partners

Address: 1900 Crown Colony Dr #402 Quincy MA

Phone: 207 939 3583

Email: aet@envpartners.com nmg@envpartners.com

Additional Project Information:

MS4

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

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	Oil & Grease	Total Phos	E coli / fecal coliform	BOD	Total Residual Chlorine	Surfactants	Sample Comments	Total # Bottles
21565 01	OF-76	8/5	9:55	water	AT	X	X	X	X	X	X		
-02	OF-238	↓	10:25	↓	↓	X	X	X		X	X		
-03	239	↓	10:30	↓	↓	X	X	X		X	X		
-04	102	↓	11:20	↓	↓	X	X	X	X	X	X		

Container Type													
Preservative													

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
Annie Tucker	12:01 8/5/21	[signature]	8/5/21 1201

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

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

MEMORANDUM

Date: September 23, 2021

To: Michael Dean, P.E. – Town Engineer, Town of Milford

Scott Crisafulli – Highway Surveyor, Town of Milford

From: Natalie Pommersheim – Project Manager, Environmental Partners

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

Subject: Illicit Discharge Detection & Elimination (IDDE) FY21 Catchment Investigations

This memorandum summarizes the FY21 IDDE catchment investigations, outlined in Task 4D of the Agreement for Professional Engineering Services – MS4 General Permit Assistance for the Office of Planning & Engineering of the Town of Milford. In accordance with the Massachusetts MS4 General Permit, the Town of Milford must perform catchment investigations at each catchment by the end of the Permit term.

On July 27 and August 3 and 4 of 2021, EP personnel visited 5 catchments during dry weather conditions. No catchments exhibited indicators of likely sewer input. The catchments were selected based on dry weather sampling lab results, which is further detailed in the following section. The locations of the catchments screened under the FY21 contract are shown in *Figures 1: Location of FY21 Catchment Investigations* and listed in *Table 1: Catchment Investigation Locations*. Catchment Packages for each catchment investigated are attached to this report and contain field forms and a detailed figure summarizing the work and findings.

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

- EP verified stormwater mapping,
- EP identified the key junction manholes (KJMs) for each catchment and inspected them during dry weather, starting at the most downstream location,
- At each KJM, EP completed a field form noting the structure's condition, presence and source of any flow, and the invert, diameter, and material of the structure and all inlet and outlet pipes. In addition, pictures were taken of the inside and outside of the structure. The KJM field forms are attached to this memorandum,

- If flow was found in a KJM, EP used field test kits to screen for ammonia, 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 SVF inventory and any catchment mapping updates identified.

Catchment Investigation Findings

A summary of the field sampling results is presented in *Table 2: Catchment Investigations Field Test Results*. No sampling results or other evidence indicated likely sewer input. Thus, no catchments were flagged for further investigation. There are some areas that need maintenance, and some further mapping updates will be required

For each catchment investigated, EP recorded the following notes.

Catchment of Outfall 40 (Beach Street)

- The catchment of Outfall 40 was investigated because dry weather sampling in 2019 resulted in E. coli concentrations greater than the regulated threshold.
- The catchment includes 10 catch basins, 7 manholes, and 3 inlets.
- All 4 KJMs were observed and found to be flowing.
- Field test kit results indicated no evidence of a sanitary sewer connection.
- No olfactory or visual evidence of an illicit discharge was observed.
- EP observed a plank of wood and a 12” pipe transecting a manhole (Manhole ID 1665). The Town should visit to determine if maintenance is required and if the pipe represents a System Vulnerability Factor (SVF).
- A catch basin (CB-3309) discharges to a manhole with a sewer manhole cover. EP believes that the manhole cover may be mislabeled and that a second MS4 drain system may be located on Beach Street, crossing the system investigated for this report. The Town should verify the discharge location of this catch basin.
- The mapping of stormwater structures on this street needs to be improved.
- Catchment investigation is completed, but SVF inventory and refined catchment delineation are pending, and Town follow-up is needed.

Catchment of Outfall 271 (Maple Street)

- The catchment of Outfall 271 was investigated because dry weather sampling in 2018 resulted in a specific conductivity concentration greater than the regulated threshold.
- The catchment includes 8 catch basins and 5 manholes.
- The sole KJM was observed and found to be flowing.
- Field test kit results indicated no evidence of a sanitary sewer connection.
- No olfactory or visual evidence of an illicit discharge was observed.
- Catchment investigation is completed, but SVF inventory and refined catchment delineation are pending.

Catchment of Outfall OF-156 (Princess Pine Lane)

- The catchment of Outfall OF-156 was investigated because dry weather sampling in 2018 resulted in a chorine concentration greater than the regulated threshold.
- The catchment includes 12 catch basins and 7 manholes.
- The sole KJM was observed and found to be flowing.
- Field test kit results indicated no evidence of a likely sanitary sewer connection. The KJM also had no visual or olfactory evidence of an illicit connection.
- During connectivity verification on 7/27/21, EP noticed that Manhole 143 had visible suds. When EP returned on 8/3/21, no suds were visible and field sampling results showed no sign of likely sanitary sewer input.
- The Town should revisit Manhole 143 and if suds are observed again the Town should attempt to determine the source of the suds.
- Catchment investigation is completed, although Town follow-up is suggested and SVF and refined catchment delineation are pending.

Catchment of Outfall OF-200 (Bowdoin Drive)

- The catchment of Outfall 271 was investigated because dry weather sampling in 2018 resulted in a chorine concentration greater than the regulated threshold.
- The catchment includes 32 catch basins and 13 manholes.
- The catchment includes 5 KJMs, all of which were found to be flowing.
- 4 of the 5 KJMs were field sampled; all sampling results showed no evidence of a likely sanitary sewer connection.
- No olfactory or visual evidence of an illicit discharge was observed.
- The final KJM requires a police detail to safely access and sample. Currently, the catchment investigation is **incomplete**, and the SVF inventory and refined catchment delineation are pending.

Catchment of Outfall OF-201 (Manoogian Circle)

- The catchment of Outfall 201 was investigated because dry weather sampling in 2018 resulted in an E. coli concentration greater than the regulated threshold.
- The catchment includes 14 catch basins and 12 manholes.
- The 2 KJMs were observed and found to be flowing.
- Only 1 of the 2 KJMs had enough stormwater flow to be sampled. Field test kit results at that manhole indicated no evidence of a sanitary sewer connection.
- No olfactory or visual evidence of an illicit discharge was observed.
- Catchment investigation is completed, but SVF inventory and refined catchment delineation are pending.

Recommendations

In conclusion, EP recommends the following:

1. Complete catchment investigation for Catchment OF-200 (requires police detail),
2. Complete mapping updates as required from field investigations, especially on Beach Street
3. Refine catchment delineations,
4. Conduct maintenance on structures as noted,

5. Identify/deny presence of SVFs in these catchments,
6. Continue IDDE catchment investigations, investigating a portion of the remaining catchments each year for the next 6 years, and
7. Continue performing wet weather outfall sampling at outfalls within catchments that have at least 1 SVF identified.

Attachments:

Certification Page
Table 1: Catchment Investigation Locations
Table 2: Stormwater Field Test Kit Results
Figure 1: Locations of FY21 Catchment Investigations
Catchment Packages
- Catchment Investigation for Outfall 40
- Catchment Investigation for Outfall 271
- Catchment Investigation for Outfall OF-156
- Catchment Investigation for Outfall OF-200
- Catchment Investigation for Outfall OF-201

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

Table 1: Catchment Investigation Locations
Milford, MA

Outfall ID	Catchment	Subcatchment	Receiving Water	Approximate Street Address	Catchment Investigation Date	Dry Weather Screening Status	Catchment Investigation Notes	Catchment Investigation Status
40	D	262	Charles River	35 Beach Street	8/3/2021	Flowing	- 4 Key Junction Manholes visited - No signs of likely sewer input	Completed, pending SVF identification and catchment delineation
271	H	146	Unnamed stream north of Beaver Pond	55 Maple Street	8/3/2021	Flowing	- 1 Key Junction Manhole visited - No sign of likely sewer input	Completed, pending SVF identification and catchment delineation
OF-156	U	220	Unnamed Tributary to Huckleberry Brook	27 Pricess Pine Lane	7/27/2021 and 8/3/2021	Flowing	- 1 Key Junction Manhole visited - No sign of likely sewer input	Completed, pending SVF identification and catchment delineation
OF-200	P	74	Unnamed Wetlands to Little Field Pond	7 Bowdoin Drive	8/4/2021	Flowing	- 4 Key Junction Manholes within the catchment - 3 Key Junction Manholes observed and sampled - 1 Key Junction Manhole observed, but not sampled due to traffic - So far, no sign of likely sewer input	NOT COMPLETED - police detail required to safely sample last KJM
OF-201	U	39	Unnamed Wetlands to Little Field Pond	7 Manoogian Circle	8/4/21	Flowing	- 2 Key Junction Manholes visited - No sign of likely sewer input	Completed, pending SVF identification and catchment delineation

Table 2: Stormwater Field Test Kit Results
Milford, MA

Outfall ID		40				271	OF-156		OF-200			OF-201
Catchment		D				H	U		P			U
Discharge Waterbody		Charles River				Beaver Pond	Huckleberry Brook		Little Field Pond			Little Field Pond
Structure ID		Manhole 1665	Manhole 1909	Manhole 1908	Manhole 1931	Manhole 1104	Manhole 92	Manhole 143	Manhole 793	Manhole 740	Manhole 791	Manhole 859
Date Sampled		8/3/2021	8/3/2021	8/3/2021	8/3/2021	8/3/2021	7/27/2021	8/3/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021
Field Test Results												
Ammonia (mg/L)	0.5 mg/L	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	**1.0**
Total Chlorine (mg/L)	0.1 mg/L	**0.2**	0.0	**0.2**	**0.2**	**0.5**	**0.1**	**0.2**	**0.4**	**0.5**	**0.5**	0.0
Surfactants (mg/L)	0.25 mg/L	**0.5**	0.25	0.25	**0.5**	**0.5**	**1.5**	0.25	0.25	0.25	0.25	0.25

Bold Values exceed contaminant criteria.

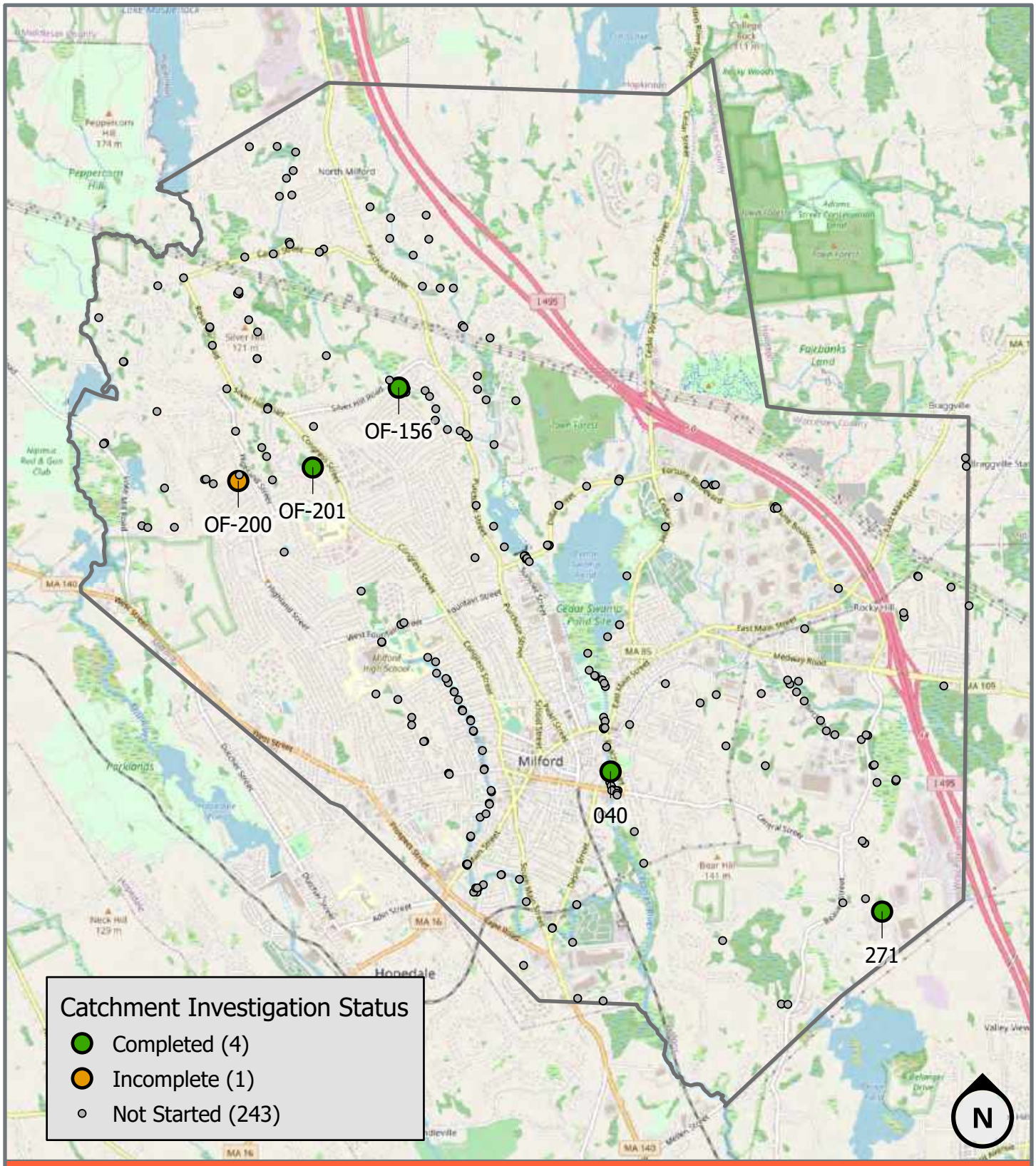

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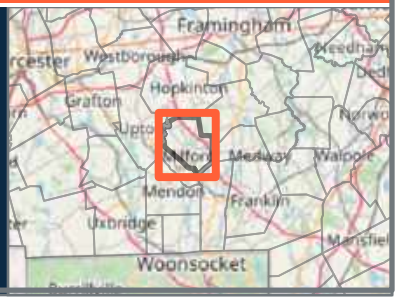
Figure 1: Locations of FY21 Catchment Investigations

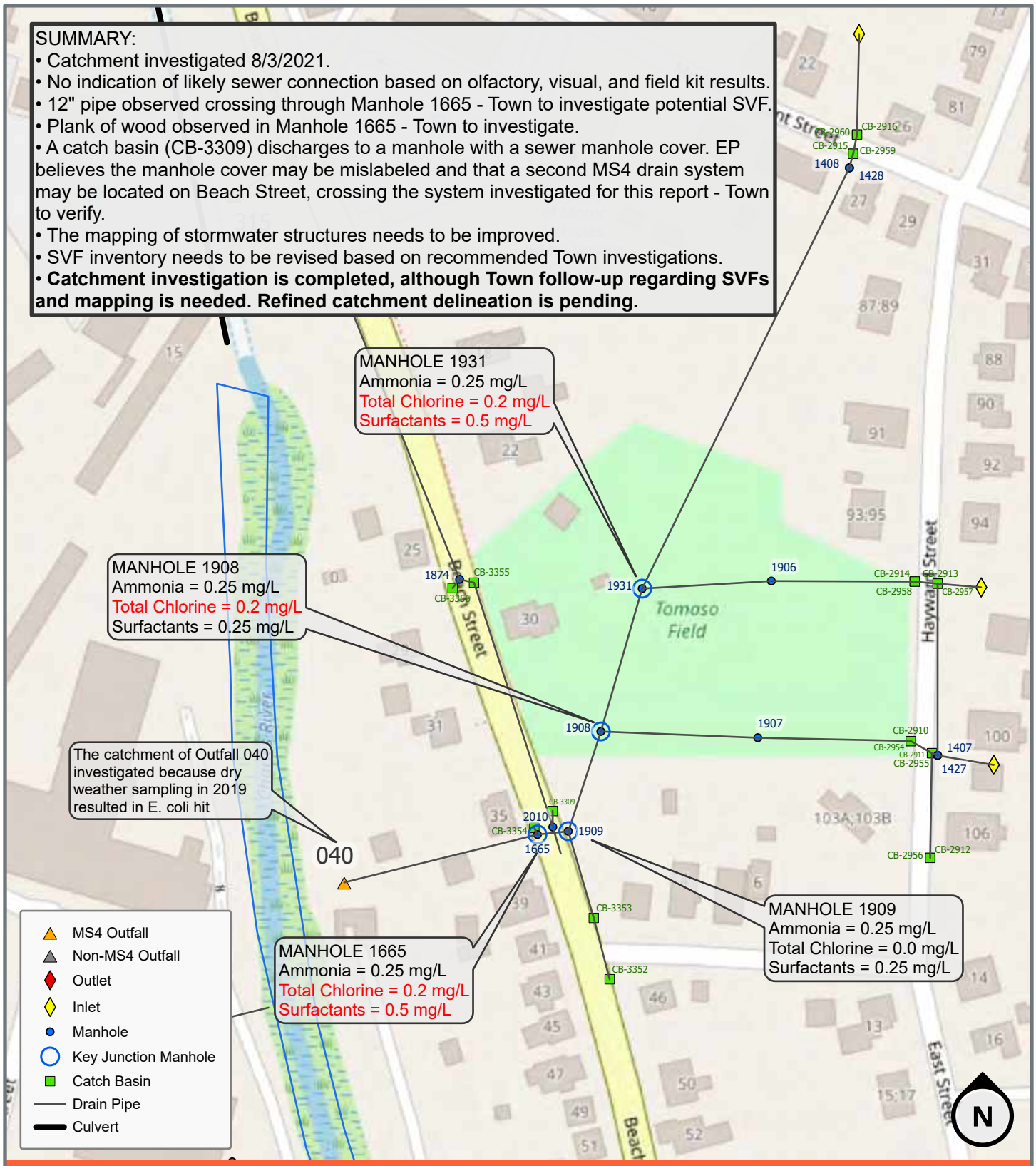
Milford, Massachusetts

0 0.25 0.5 1 Miles



CATCHMENT INVESTIGATION PACKAGE FOR OUTFALL 040

SUMMARY:
- Catchment investigated 8/3/2021.
- No indication of likely sewer connection based on olfactory, visual, and field kit results.
- 12" pipe observed crossing through Manhole 1665 - Town to investigate potential SVF.
- Plank of wood observed in Manhole 1665 - Town to investigate.
- A catch basin (CB-3309) discharges to a manhole with a sewer manhole cover. EP believes the manhole cover may be mislabeled and that a second MS4 drain system may be located on Beach Street, crossing the system investigated for this report - Town to verify.
- The mapping of stormwater structures needs to be improved.
- SVF inventory needs to be revised based on recommended Town investigations.
- **Catchment investigation is completed, although Town follow-up regarding SVFs and mapping is needed. Refined catchment delineation is pending.**



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Catchment Investigation for Outfall 040

Milford, Massachusetts

0 75 150 300 Feet

040,1665

Created	2021-08-03 14:23:43 UTC by EPField 01
Updated	2021-08-04 20:01:24 UTC by EPField 01
Location	42.1423091893813, -71.5140790119767

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	1665
Structure Type	Manhole
Outfall ID	040
Date	2021-08-03
Time	10:23
Address	21 Pond Street Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	75

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	75

9

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

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	?
Pipe Diameter (inches)	0
Pipe Invert (inches)	0
Pipe Notes	Unable to see pipe - manhole is wide - flow must be coming from an assumed pipe
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	Manhole 1930

Structure Notes	12in RCP pipe going through manhole - SVF

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Surfactants	0.5
Chlorine	0.2
Ammonia	0.25
Surface Photos	

Interior Photos

040, 1908

Created	2021-08-03 17:04:03 UTC by EPField 01
Updated	2021-08-03 17:34:56 UTC by EPField 01
Location	42.1410485225067, -71.51162981987

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	1908
Structure Type	Manhole
Outfall ID	040
Date	2021-08-03
Time	13:04
Address	30 Beach Street Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	65

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	65

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	64.5

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	57.5
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	Manholes 1907 and 1931

Physical Indicators

Floatables	No

Odor	No

Structure

Sampling Location	Structure

Field Kits

Surfactants	0.22
Chlorine	0.2
Ammonia	0.25

Surface Photos

Interior Photos


12
2
6

040, 1909

Created	2021-08-03 15:10:56 UTC by EPField 01
Updated	2021-08-03 15:53:14 UTC by EPField 01
Location	42.1407248370785, -71.5117310732603

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	1909
Structure Type	Manhole
Outfall ID	040
Date	2021-08-03
Time	11:10
Address	35 Beach Street Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	74

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	?
Pipe Diameter (inches)	30
Pipe Invert (inches)	74
Pipe Notes	Unable to get clear view of pipe - measurements are estimations

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	?
Pipe Diameter (inches)	30
Pipe Invert (inches)	73
Pipe Notes	Can't determine material

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	1.5
Pipe Invert (inches)	54
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	MH 1908

Structure Notes	Pipe supposedly located at 8pm did not exist. Pipe from cb actually goes to manhole with sewer manhole cover; EP suspects that there is a second drainage system on this road and the sewer manhole cover is mislabeled - Town to investigate further

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Surfactants	0.22
Chlorine	0
Ammonia	0.25

Surface Photos

Interior Photos


11
3
6

Other Photos

040, 1931

Created	2021-08-03 17:39:43 UTC by EPField 01
Updated	2021-08-03 18:00:36 UTC by EPField 01
Location	42.1413966, -71.5114213

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	1931
Structure Type	Manhole
Outfall ID	040
Date	2021-08-03
Time	13:39
Address	24 Beach Street Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	68

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	69

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	68.5
Pipe Invert (inches)	68.5
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	1408/1428 and 1906

Physical Indicators

Floatables	No

Odor	No

Structure

Sampling Location	Structure

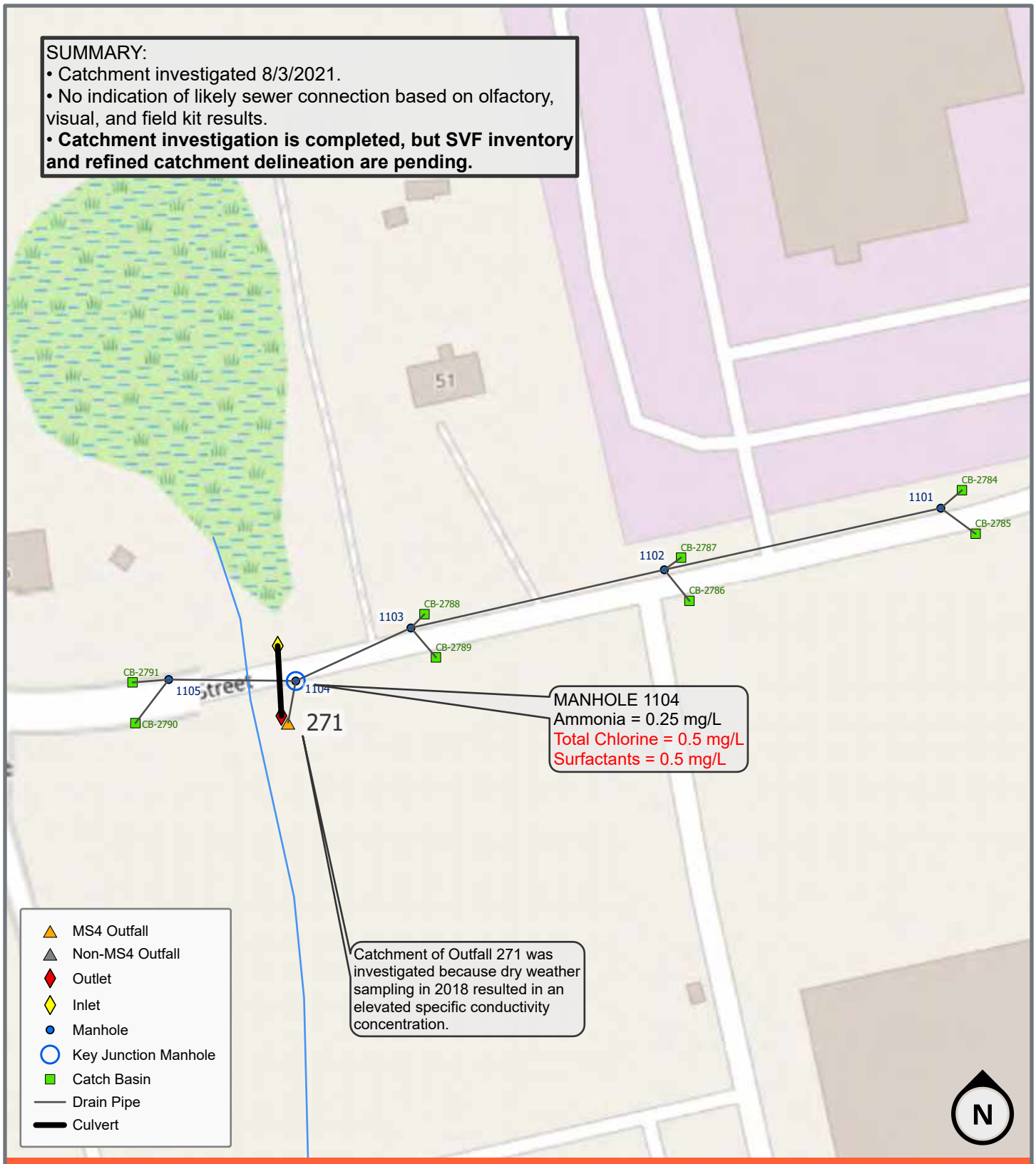
Field Kits

Surfactants	0.5
Chlorine	0.2
Ammonia	0.25
Surface Photos	

Interior Photos

CATCHMENT INVESTIGATION PACKAGE FOR OUTFALL 271

SUMMARY:
• Catchment investigated 8/3/2021.
• No indication of likely sewer connection based on olfactory, visual, and field kit results.
• **Catchment investigation is completed, but SVF inventory and refined catchment delineation are pending.**



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Catchment Investigation for Outfall 271

Milford, Massachusetts

0 75 150 300 Feet

271, 1104

Created	2021-08-03 18:56:14 UTC by EPField 01
Updated	2021-08-03 19:20:09 UTC by EPField 01
Location	42.1305968, -71.4864338

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	1104
Structure Type	Manhole
Outfall ID	271
Date	2021-08-03
Time	14:56
Address	51 Maple Street Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	116

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	116

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	53

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	84
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	Manhole 1103

Physical Indicators

Floatables	No

Odor	No

Pipe, 2

Sampling Location	Pipe
Pipe Clock Position	2

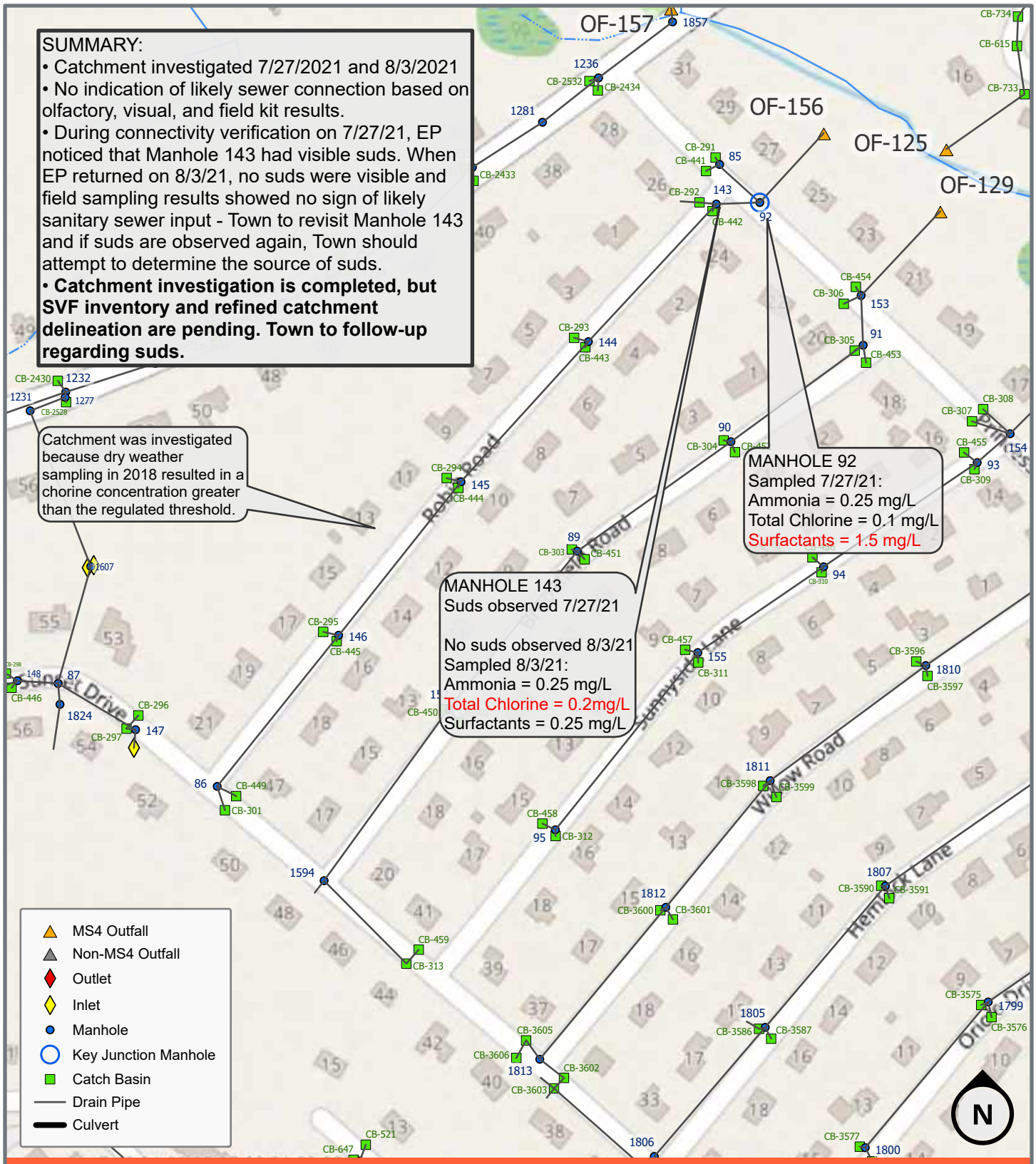
Field Kits

Surfactants	0.5
Chlorine	0.5
Ammonia	0.25

Surface Photos

Interior Photos

CATCHMENT INVESTIGATION PACKAGE FOR OUTFALL OF-156



ENVIRONMENTAL PARTNERS
— An Apex Company —

Catchment Investigation for OF-156

Milford, Massachusetts

0 125 250 500 Feet

OF-156, 92

Project	MVGP - 10/05 - Friday
Created	2021-07-27 18:44:15 UTC by EPField 01
Updated	2021-07-27 19:34:53 UTC by EPField 01
Location	42.167647, -71.5331822

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	92
Structure Type	Manhole
Outfall ID	OF-156
Date	2021-07-27
Time	14:44
Address	24 Princess Pine Lane Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	52.5

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	51.5
Pipe Notes	Source of flow

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	52.5
Pipe Notes	Outlet

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate

Flow Source	Manhole ID 143

Physical Indicators

Floatables	No
Odor	No

Pipe, 1

Sampling Location	Pipe
Pipe Clock Position	1

Field Kits

Surfactants	1.5
Chlorine	0.1
Ammonia	0.25

Surface Photos

Interior Photos


1
3
6

Other Photos

OF-156, 143

Project	MVGP - 10/05 - Friday
Created	2021-07-27 19:40:40 UTC by EPField 01
Updated	2021-08-03 13:42:08 UTC by EPField 01
Location	42.1676499, -71.5334361

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	143
Structure Type	Manhole
Outfall ID	OF-156
Date	2021-07-27
Time	15:40
Address	24 Princess Pine Lane Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	50.5

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49
Pipe Notes	No flow

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48
Pipe Notes	Flowing

12

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

6

Pipe Clock Position	6

Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	50.5
Pipe Notes	Outlet
Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	CB-292 and manhole 144

Physical Indicators

Floatables	Yes
Floatables Type	Suds/Soap
Floatables Note	Small amount of suds
Odor	No

Structure

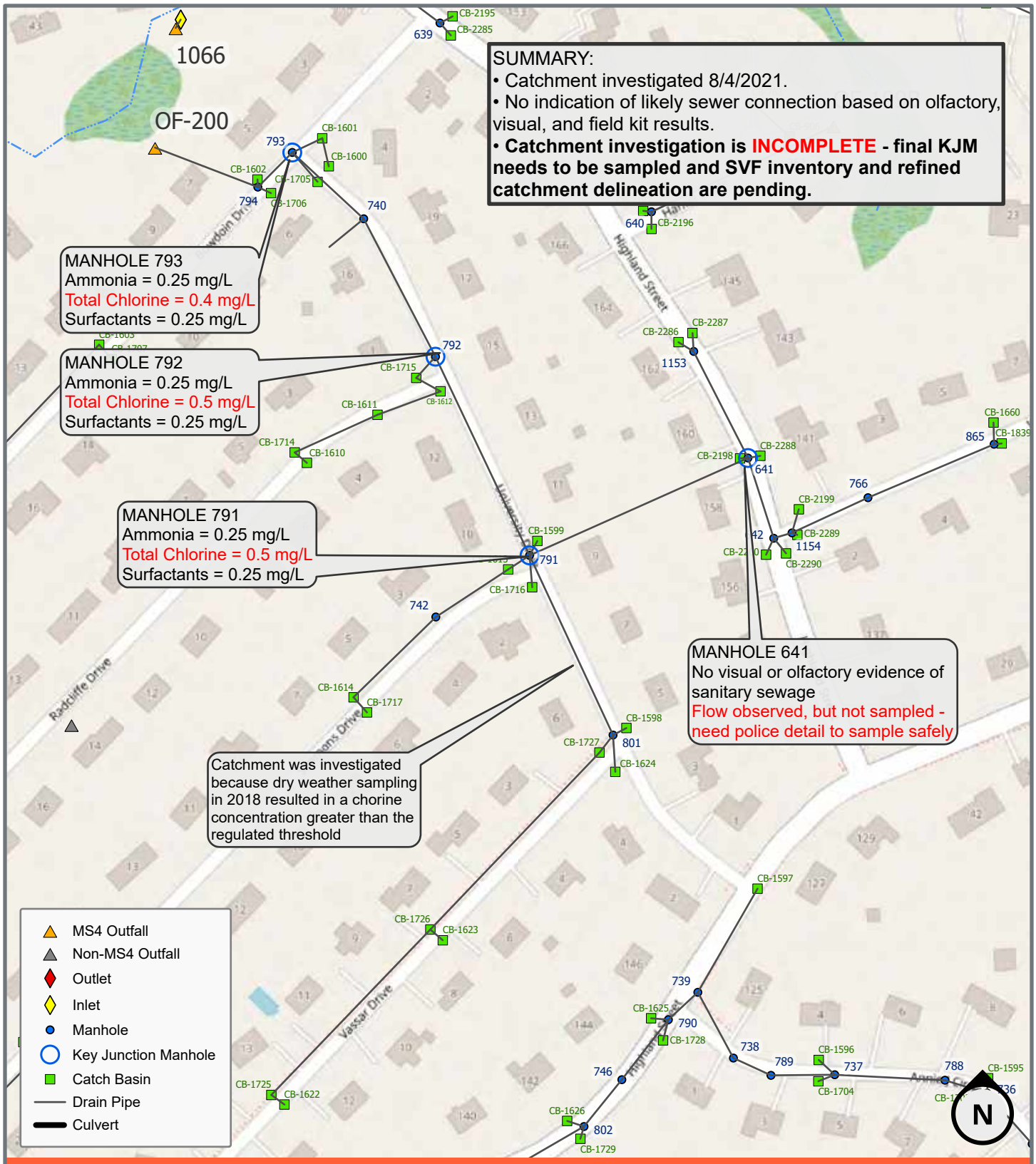
Sampling Location	Structure

Field Kits

Surfactants	0.25
Chlorine	0.2
Ammonia	0.25
Sampling Notes	Sampled 8/3/21 9:40, sampled from pipe with most flow
Surface Photos	

Interior Photos

CATCHMENT INVESTIGATION PACKAGE FOR OUTFALL OF-200



ENVIRONMENTAL PARTNERS
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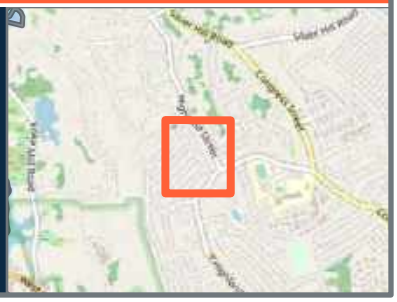
Catchment Investigation for OF-200

Milford, Massachusetts

0 100 200 400 US Feet



OF-200, Manhole 641

Created	2021-08-04 16:52:50 UTC by EPField 01
Updated	2021-08-04 19:21:04 UTC by EPField 01
Location	42.3197499150562, -71.1064167693257

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	Manhole 641
Structure Type	Manhole
Outfall ID	OF-200
Date	2021-08-04
Time	12:52
Address	

Structure Information

Maintenance Required	No
Manhole Invert (inches)	99

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	99

6

Pipe Clock Position	6
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	73

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	69.5

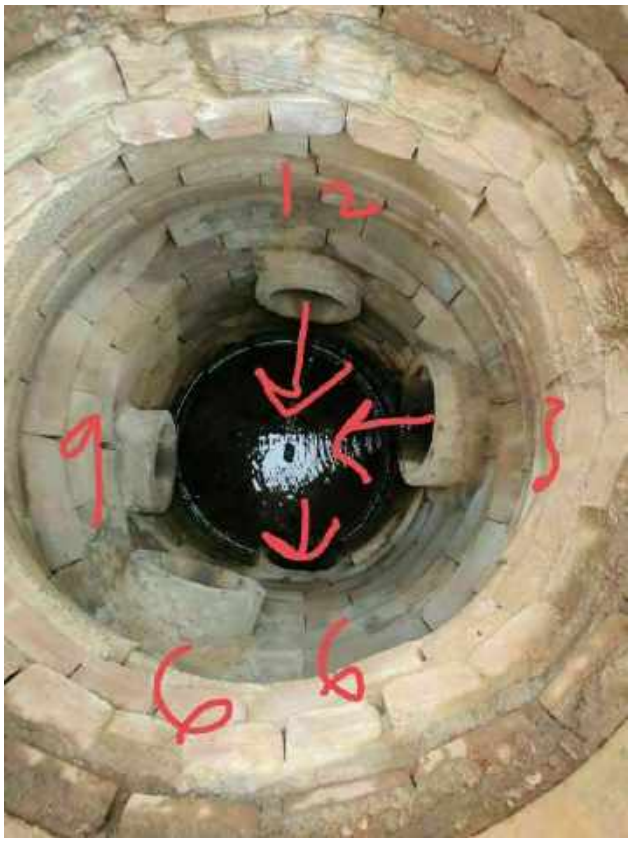
3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	58
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	See Figure

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos


12
9
3
6
6

OF-200, 791

Created	2021-08-04 15:18:13 UTC by EPField 01
Updated	2021-08-04 15:54:40 UTC by EPField 01
Location	42.1598151, -71.5464207

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	791
Structure Type	Manhole
Outfall ID	OF-200
Date	2021-08-04
Time	11:18
Address	9 University Drive Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	68

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	68

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	60

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	66

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	61

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	43
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Surfactants	0.25
Chlorine	0.5
Ammonia	0.25

Surface Photos

Interior Photos


12
1
3
7
6

OF-200, 792

Created	2021-08-04 15:55:13 UTC by EPField 01
Updated	2021-08-04 17:04:52 UTC by EPField 01
Location	42.1604893, -71.5467619

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	792
Structure Type	Manhole
Outfall ID	OF-200
Date	2021-08-04
Time	11:55
Address	15 University Drive Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	66.5

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	68

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	65.5

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	67

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	MH 791, CB 713

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Surfactants	0.25
Chlorine	0.5
Ammonia	0.25

Surface Photos

Interior Photos


12
10
2
6

OF-200, 794

Created	2021-08-04 14:30:31 UTC by EPField 01
Updated	2021-08-04 15:18:09 UTC by EPField 01
Location	42.1612502285452, -71.547553986311

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	794
Structure Type	Manhole
Outfall ID	OF-200
Date	2021-08-04
Time	10:30
Address	5 Bowdoin Drive Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	77

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	36
Pipe Invert (inches)	77

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	71

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	76

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	72

Pipes Submerged	No
Flow Present	Yes
Flow Description	Moderate
Flow Source	Manhole 740, catch basin 1599

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

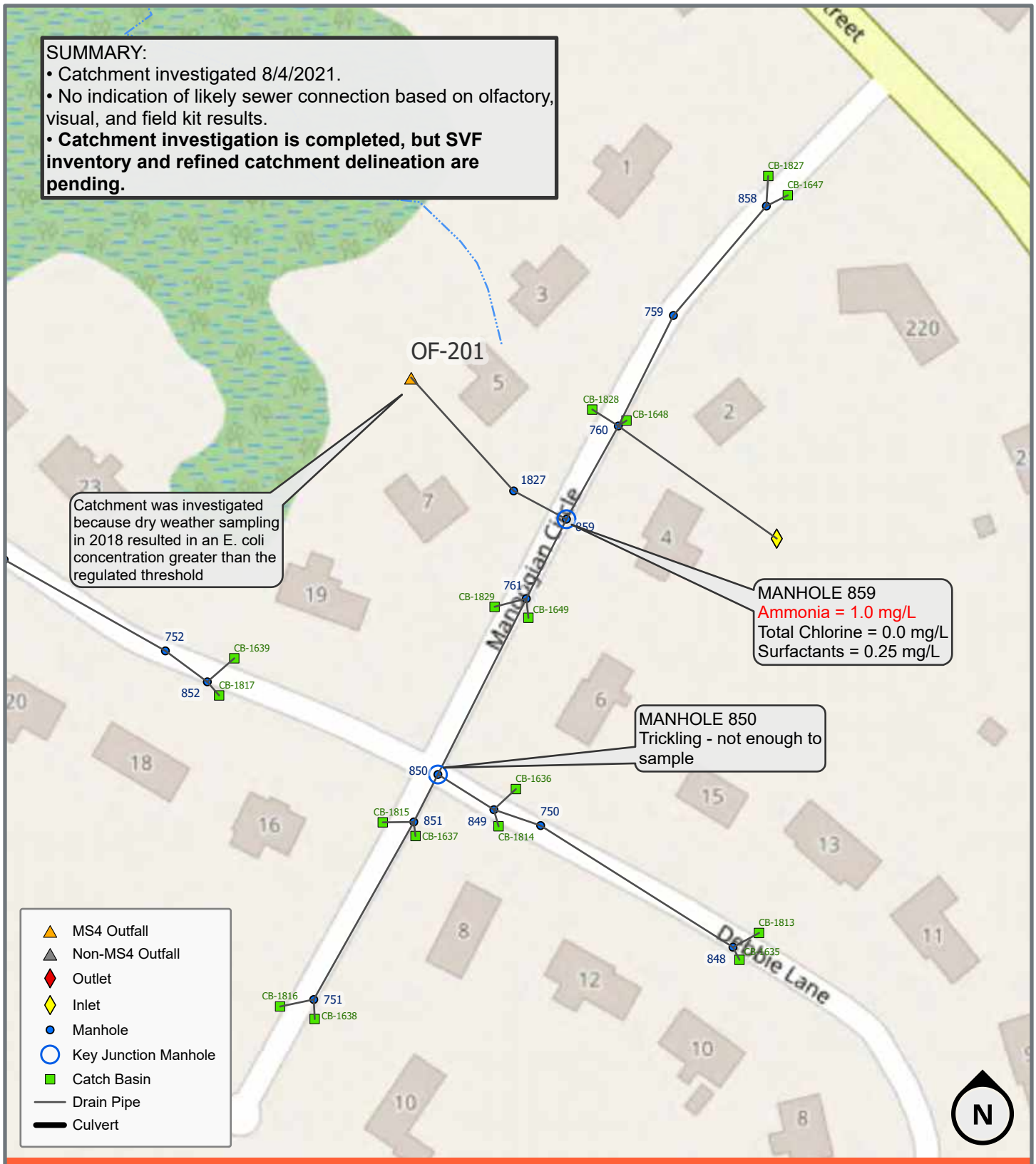
Field Kits

Surfactants	0.25
Chlorine	0.4
Ammonia	0.25

Surface Photos

Interior Photos

CATCHMENT INVESTIGATION PACKAGE FOR OUTFALL OF-201



ENVIRONMENTAL PARTNERS
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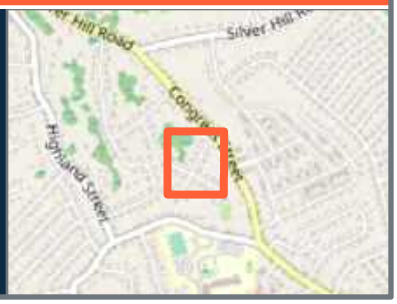
Catchment Investigation for OF-201

Milford, Massachusetts

0 50 100 200 US Feet



OF-201, 850

Created	2021-08-04 13:42:42 UTC by EPField 01
Updated	2021-08-04 13:51:26 UTC by EPField 01
Location	42.1614634637962, -71.5410010144114

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	850
Structure Type	Manhole
Outfall ID	OF-201
Date	2021-08-04
Time	09:42
Address	6 Manoogian Circle Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	59

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	59

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	49

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	20
Pipe Invert (inches)	53
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	Man hole 851

Physical Indicators

Floatables	No

Odor	No
General Notes	Attempted to sample but found the amount of flow was too little to sample
Surface Photos	
Interior Photos	

OF-201, 859

Created	2021-08-04 13:04:17 UTC by EPField 01
Updated	2021-08-04 13:36:28 UTC by EPField 01
Location	42.1619341693703, -71.5406620502472

Background Data

Client	Town of Milford
EP Representatives	Annie Tucker, Mike Franck
Structure ID	859
Structure Type	Manhole
Outfall ID	OF-201
Date	2021-08-04
Time	09:04
Address	4 Manoogian Circle Milford, Massachusetts 01757

Structure Information

Maintenance Required	No
Manhole Invert (inches)	67

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	67

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	66.5

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	66.5
Pipe Notes	Could not see pipe. Assumed it was roughly same size as 9 pipe Inlet
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Surfactants	0.25
Chlorine	0
Ammonia	1

Surface Photos

Interior Photos

APPENDIX F

Outfall Catchment System Vulnerability Factor (SVF) Inventory

Appendix F – Outfall Catchment System Vulnerability Factor (SVF) Inventory
Milford, Massachusetts
Revision Date: September 2021

Outfall ID	Receiving Water	1 History of SSOs	2 Common or Twin Invert Manholes	3 Common Trench Construction	4 Storm/Sanitary Crossings (Sanitary Above)	5 Sanitary Lines with Underdrains	6 Inadequate Sanitary Level of Service	7 Areas Formerly Served by Combined Sewers	8 Sanitary Infrastructure Defects	9 SSO Potential In Event of System Failures	10 Sanitary and Storm Drain Infrastructure >40 years Old	11 Septic with Poor Soils or Water Table Separation	12 History of BOH Actions Addressing Septic Failure
31	Charles River	Yes											
39	Charles River	Yes											
40	Charles River	Yes											
OF-510	Charles River	Yes											
37	Charles River	Yes											
102	Godfrey Brook	Yes											
OF-101	Godfrey Brook	Yes											
OF-102	Godfrey Brook	Yes											
OF-103	Godfrey Brook	Yes											
OF-104	Godfrey Brook	Yes											
OF-315	Godfrey Brook	Yes											
OF-503	Godfrey Brook	Yes											
OF-504	Godfrey Brook	Yes											
239	Littlefield Pond	Yes											
OF-238	Littlefield Pond	Yes											

Presence/Absence Evaluation Criteria:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
2. Common or twin-invert manholes serving storm and sanitary sewer alignments
3. Common trench construction serving both storm and sanitary sewer alignments
4. Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
5. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
6. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
7. Areas formerly served by combined sewer systems
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations
9. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old
11. 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)
12. History of multiple Board of Health actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance)

APPENDIX G

New England Interstate Water Pollution Control Commission IDDE Manual

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

January 2003

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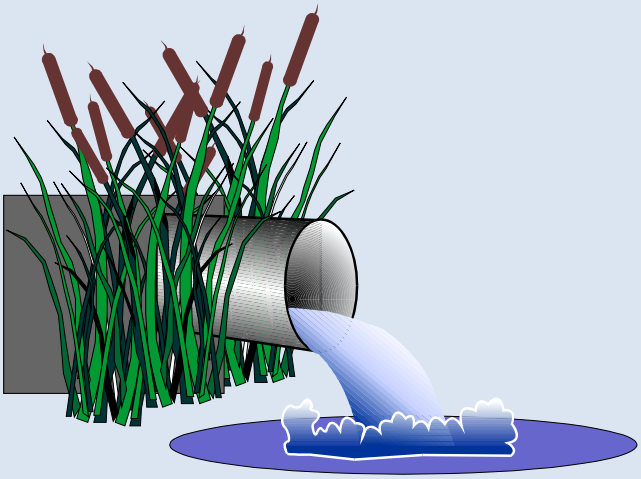
ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities



Prepared by the

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

Boott Mills South

100 Foot of John Street

Lowell, Massachusetts 01852

Ronald F. Poltak, *Executive Director*

COMPACT MEMBER STATES

Connecticut
Maine
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

Copies of this document may be downloaded from *www.neiwpcc.org.*

January 2003

ACKNOWLEDGEMENTS

This manual was developed by the New England Interstate Water Pollution Control Commission (NEIWPCC). NEIWPCC is a nonprofit interstate agency, established by an Act of Congress in 1947, that serves its member states (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) by providing coordination, public education, training, and leadership in the management and protection of water quality.

This project was initiated by NEIWPCC's Storm Water Workgroup, which is composed of state and federal environmental agency staff. The group perceived a need for resources to help municipalities in NEIWPCC-member states that are regulated under the U.S. Environmental Protection Agency's (EPA's) Phase II storm water program comply with regulatory requirements. This manual is intended to help municipalities develop illicit discharge detection and elimination programs—one of the six minimum control measures under Phase II.

This manual was made possible by a grant from the U.S. Environmental Protection Agency. The contents do not necessarily reflect the views and policies of EPA or NEIWPCC's member states, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

This manual was compiled and written by Rebekah Lacey, with assistance from Kim Starbuck and other NEIWPCC staff. Editing, graphic design, and layout were performed by Ellen Frye and Ricki Pappo of ENOSIS. Thelma Murphy served as the EPA Project Officer. NEIWPCC would like to thank Andrea Donlon, NHDES, for her many contributions to this document, which included providing information, comments, and photographs—most of the photographs in the manual were either provided by Andrea or taken by NEIWPCC staff while accompanying Andrea on field work.

NEIWPCC would also like to thank the following people who contributed their time in providing information for and/or reviewing the manual:

Interviews or Other Information

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Jim Pease, VTDEC
Ginny Scarlet, MADEP
Chris Stone, CTDEP

CONTENTS

ACRONYMS

BMP	Best Management Practice
BWSC	Boston Water and Sewer Commission
GIS	Geographic Information System
GPS	Global Positioning System
IDDE	Illicit Discharge Detection and Elimination
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
SIC	Standard Industrial Classification

EPA	U.S. Environmental Protection Agency
CTDEP	Connecticut Department of Environmental Protection
MEDEP	Maine Department of Environmental Protection
MADEP	Massachusetts Department of Environmental Protection
NHDES	New Hampshire Department of Environmental Services
NYSDEC	New York State Department of Environmental Conservation
RIDEM	Rhode Island Department of Environmental Management
VTDEC	Vermont Department of Environmental Conservation

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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.

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.

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.

[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.

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

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.

CAN A DITCH BE AN OUTFALL?

The paragraph below is an excerpt from EPA's Storm Water Phase II Final Rule (USEPA, 1999).

The term "outfall" is defined in 40 CFR 122.26(b)(9) as "a point source at the point where a municipal separate storm sewer discharges to waters of the United States." The term "municipal separate storm sewer" is defined at 40 CFR 122.26(b)(8) as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)." Following the logic of these definitions, a "ditch" may be part of the municipal separate storm sewer, and at the point where the ditch discharges to waters of the United States, it is an outfall. As with any determination about jurisdictional provisions of the CWA, however, final decisions require case-specific evaluations of fact.

(and the permitting authority) can locate any specific outfall to check on discharges. The most basic way to meet the mapping requirement is to use an existing map (e.g., a topographic map) that shows receiving waters. You can then mark outfall locations on the map by hand (using existing information augmented by a field survey). Make sure the names of receiving waters are shown on the map; for receiving waters that don't have names, it is helpful to indicate the nearest named water body downstream. The graphic at the beginning of this chapter shows an example of a marked-up United States Geological Survey map (markings do not represent actual outfalls). The next step up is a more sophisticated paper map (e.g., blueprint-style). Figure 1 presents an example of a simple paper map showing outfalls and other key features of the storm sewer system.

In many municipalities, a paper map may be completely adequate for carrying out an IDDE program. However, if your MS4 has the resources, or if your municipality has a complex storm sewer system, you may want to make use of available computer technology in making your map.

Global Positioning System (GPS) technology can be used to obtain the coordinates (longitude and latitude) for each outfall. A GPS unit, which uses data from the U.S. Department of Defense's constellation of GPS satellites to constantly update position, can be carried with you on your field survey. A particular position can be recorded and later downloaded into a Geographic Information System (GIS) database. Using GIS, the coordinates can be linked with other site-specific information, such as a picture and history of the outfall. GPS units can be purchased or rented.

There are various computerized mapping programs. A GIS program (e.g., ArcGIS) combines a georeferenced database with mapping capability, so that different geographical attributes (e.g., streets, outfalls, land use, monitoring data) can be mapped as

"layers" and displayed either separately or together. AutoCAD®, a design/drafting platform, is another program commonly used for storm sewer mapping.

If you plan to map via computer, decide if you want to make the mapping system compatible with other departments within your municipality and/or with other data sources (e.g., state agencies that provide GIS layers). Since storm sewer systems are often constructed in roadways, the use of the GIS road line data layer can be helpful in developing a map. If this layer is available, it is usually very accurate and frequently updated by state or regional agencies. Local or regional planning commissions may be able to provide assistance with GIS technology and map development. Once a particular software system has been chosen, it is helpful to require developers to submit compatible electronic updates for subsequent development to ensure that the map and data remain current after the initial mapping effort is finished.

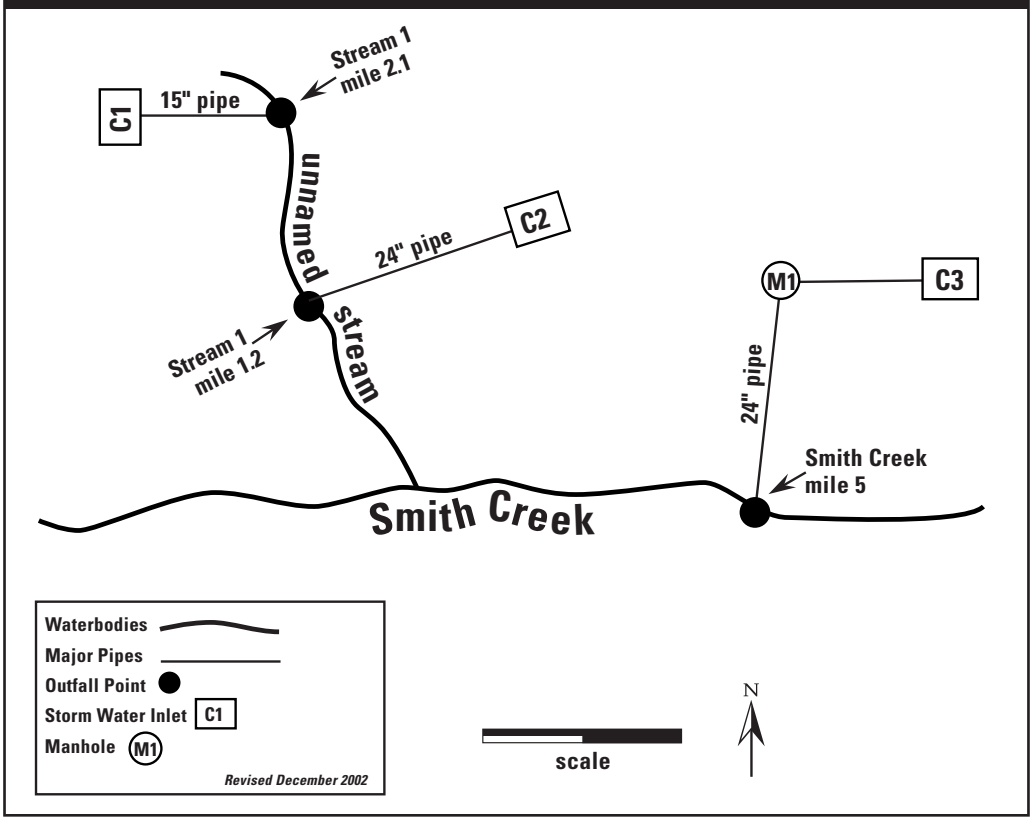
PRIORITIZING AREAS TO BE MAPPED

You may find that practical considerations will dictate the need to conduct mapping in phases. In this case, it is best to prioritize your mapping agenda. For example, older developed areas are more likely to have illicit discharges than newer areas for various reasons (e.g., many municipalities have imposed inspection requirements on new construction that help to prevent illegal connections). Therefore, if your community has limited resources, you would benefit from mapping the older areas first to ensure that priority areas are mapped.

You may find that practical considerations will dictate the need to conduct mapping in phases. In this case, it is best to prioritize your mapping agenda.

Other considerations in setting mapping priorities include land uses, reports of illicit discharges, and other information specific to each MS4. Although EPA's Phase II regulations require that only outfalls be mapped, once an illicit discharge is detected at an outfall, it may be necessary to map the portion of the storm sewer system leading to the outfall so that you are able to locate the source of the discharge. If possible, mapping the entire storm sewer system may prove very helpful to your IDDE program.

Figure 1 SAMPLE MAP



REFERENCES: CHAPTER 2

Colorado Department of Public Health and Environment, Water Quality Control Division. 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal stormwater discharge permit.* *http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html*

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. 2002. *Storm Drain Mapping Project Field Manual* (Draft). *http://www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

Oakland County, Michigan. 2002. *Illicit Discharge Elimination Program.* *http://www.co.oakland.mi.us/drain/program_service/illicit_disch.html*

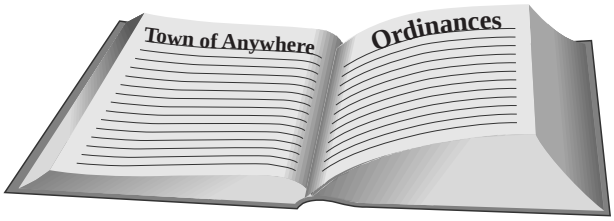
Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238. *http://www.epa.gov/clariton*

Rohrer, C.A., and Beckley, R.J. Undated. *Using GIS Tools to Implement an Illicit Discharge Elimination Program in Livonia, Michigan.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

3 PROHIBITING ILLICIT DISCHARGES

The second mandatory element of a Phase II IDDE program requires that MS4 operators "to the extent allowable under State, Tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the separate storm sewer system and implement appropriate enforcement procedures and actions as needed."



ILLICIT DISCHARGE ORDINANCES

As EPA's guidance specifies, a municipal ordinance created to comply with Phase II regulations must include a *prohibition* of illicit discharges and an *enforcement* mechanism. Note that it is also essential for the municipality to establish legal authority to inspect properties suspected of releasing contaminated discharges into the storm sewer system. Your municipality may already have a sewer use ordinance or similar bylaw that meets Phase II requirements, or that can be amended to meet the requirements. Consult with your town counsel and other municipal authorities to review your town's existing bylaws and regulations and determine what changes or additions are needed and what the procedure is for making those changes. If you need to make changes, you may want to review the model bylaws and other guidance discussed below.

EPA's nonpoint source pollution program Web site offers several examples of local ordinances for illicit discharges (USEPA, 2002). Appendix A of this manual presents EPA's general model ordinance, which synthesizes a number of existing municipal ordinances. In using any of these ordinances as a model, a community should take into account the legal authority granted to it under state law, the Phase II permit requirements in that state, the enforcement methods it deems appropriate, and any other locality-specific considerations.

A municipal ordinance created to comply with Phase II regulations must include a* prohibition *of illicit discharges and an* enforcement *mechanism.

A workgroup chaired by Massachusetts Department of Environmental Protection (MADEP) staff has been working on developing model bylaws that municipalities in the state can use to help them comply with Phase II regulations. The products of this group's work (model bylaws and associated guidance) are expected to be available on the MADEP Web site (see Chapter 10) by the time this manual is published. This group found that many of the available model ordinances did not fit well with the structure of Massachusetts government and, therefore, developed models that would work for towns in the state. The group also found that entry onto private property can be a tricky legal issue and should be treated carefully in any new or amended bylaws.

The Boston Water and Sewer Commission's (BWSC's) *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains* are available on the Web (*http://*www.bwsc.org; click on "Engineering" then "Regulations") and may serve as a useful local model. The regulations specify certain conditions under which BWSC

representatives must be granted access to property; denial of access may lead to termination of water service.

Note that illicit discharges to *storm* sewers should be addressed hand-in-hand with the issue of illegal connections of extraneous water to *sanitary* sewers (typically referred to as infiltration/inflow or I/I programs); bylaws or regulations should make clear which discharges belong in which system.

REFERENCES: CHAPTER 3

BWSC. 2002. *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains.* *http://www.bwsc.org*

Personal communication from Ginny Scarlet, MADEP, November 29, 2002.

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851.

USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* *http://www.epa.gov/owow/nps/ordinance/discharges.htm*

4 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: LOCATING PRIORITY AREAS

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: locating priority areas; tracing the source of an illicit discharge; removing the source of an illicit discharge; and program evaluation and assessment. The first component, locating priority areas, is the subject of this chapter. Each of the other three components will be discussed in chapters five, six, and seven respectively.

THE IDDE PLAN

- ➤ **Locating priority areas**
- **Tracing the source of an illicit discharge**
- **Removing the source of an illicit discharge**
- **Program evaluation and assessment**

The process of identifying "priority areas" can be broken down into three steps:

- ➤ ***Use available information to identify potential hot spots***
- ➤ ***Conduct dry-weather field screening to look for non-storm water discharges***
- ➤ ***Conduct water quality tests to see if these non-storm water discharges seem to be illicit discharges***

The following sections focus on each of these approaches.

IDENTIFYING POSSIBLE HOT SPOTS

"Hot spots" are areas that are considered to be likely sources of illicit discharges, based on available information. The following list provides examples of potential hot spots.

Commercial/ industrial areas These areas have been found in some communities' IDDE programs to (a) have significant numbers of illicit connections and/or (b) have discharges with a high potential to affect water quality (Tuomari, 1999 and Pitt et al., 1993). Specific business sectors can be prioritized (e.g., businesses subject to waste water pretreatment rules, businesses falling under certain Standard Industrial Classification [SIC] codes, or business sectors with a record of enforcement actions).

Older areas of town Older development may predate more stringent construction codes regarding illegal connections and may have deteriorating sewer and/or storm sewer infrastructure that can lead to infiltration problems.

Hot spots
Areas that are considered to be likely sources of illicit discharges, based on available information.

Areas where there have been repeated complaints Areas where illegal dumping or apparently contaminated discharges have been reported are obvious priority targets. Geographic Information System (GIS) mapping can be useful for visualizing complaint locations. These maps can be overlain with other pertinent resource information (e.g., locations of facilities that have had compliance violations, water quality data for receiving waters).

Locations identified from ambient water quality sampling data The locations of high levels of particular contaminants (e.g., bacteria) can help to target priority outfalls. Good resources for this information are the periodic water quality assessment reports ("305(b) reports") and lists of impaired waters ("303(d) lists") that the Clean Water Act requires each state to prepare and submit to EPA. These reports are prepared by each state's environmental agency and are available to the public, often on the state's Web site. Also, local watershed groups monitor many water bodies, particularly those in more developed areas. In addition to providing sampling data, these groups can often serve as valuable resources for information about a particular water body and potential problem areas. Other possible sources of water quality data include local Boards of Health (in Massachusetts, they must test at beaches) and water districts or departments.

CONDUCTING DRY-WEATHER OUTFALL/MANHOLE SURVEYS

Once your general geographic priority areas have been determined, dry-weather surveys of outfalls and/or manholes can be undertaken to look for non-storm water flows.

EPA recommends that you make visual observations of outfalls during dry weather. Some operators have found that dry-weather manhole inspections can also be useful. The presence of flow in a storm sewer outfall or manhole during dry weather indicates a likely illicit discharge. (Other explanations for the presence of such flow include infiltrating ground water or the diversion of a surface stream into the storm sewer system.) Because illicit discharges are often intermittent, you should ideally check for discharges multiple times in a given location (particularly in a priority location). Please note that only those with confined-space training should enter a manhole or outfall. The observation and sampling strategies described below can typically be conducted without entering manholes or outfalls.

IMPORTANT NOTE:
Only those with confined-space training should enter a manhole or outfall.

In implementing your dry-weather survey, consider adopting the following strategies.

- Combine this survey with the outfall mapping field survey (see Chapter 2) and/or water quality sampling of the discharges (discussed in the next section of this chapter).
- Enlist a watershed association or other volunteer organization to help with the outfall survey.
- Notify the public that the survey will be taking place (e.g., send notices to property owners in the area). Note that while it is desirable to keep the public informed

about the presence of survey-takers to prevent undue alarm, notification may also tip off an illegal discharger to curtail discharges; use your judgment as to the most appropriate course of action. For example, you might just specify a very general time frame during which the survey will take place.

- Keep safety considerations at the forefront of survey procedures at all times. Likely hazards should be anticipated and discussed with the individuals carrying out the survey, and individuals should be instructed to use their judgment and err on the side of caution as they conduct the survey. The survey should be conducted in groups of two or more. If manholes are opened for inspection as part of the survey, staff should wear high-visibility safety vests and block off their work area with traffic cones; police presence can be helpful for safety and to allay public concerns that can be created by individuals opening manholes.

- Determine your criterion for "dry weather." The working definition of dry weather used for sampling programs can vary depending on location-specific factors. Pitt et al. (1993) suggest that storm-runoff drainage ends in most urban areas no more than 12 hours after a storm event, but many programs (e.g., Boston, NH DES, San Diego) use a longer time period, such as no rain or no more than 1/10 inch of rain in the last 48 or 72 hours.

- Observe dry-weather flows for odor, color, turbidity, and floatable matter. Observe outfalls for deposits and stains, vegetation, and damage to outfall structures. This information can help identify contaminants present in the discharge and/or the likely nature of the discharge (e.g., sanitary, industrial). Some of the resources listed in Chapter 10 provide examples of data and observation sheets to be filled out for each outfall.

- Look up some of the resources listed in the references for this chapter for more detailed instructions for conducting dry-weather field surveys (e.g., MA DFWELE, 2002).

CASE STUDY: BOSTON WATER AND SEWER COMMISSION

USING SANDBAGS TO DETECT ILLICIT DISCHARGES

The Boston Water and Sewer Commission has had success using sandbags to help detect illicit discharges. Sandbags are placed in storm drain outlets that empty into manholes and/or water bodies. The sandbags are small enough that they do not block the storm drain outlet. They must be placed in the outlet after 48 hours of dry weather (1/10 inch of rain or less). After the bag is placed in the outlet, another 48 hours of dry weather is needed (total of 96 hours of dry weather). The outlet is then observed, and any water buildup behind the sandbag is sampled. This method is very effective in narrowing down the manhole junctures that contain illicit discharges. Sandbags cost approximately $60 each and can be reused. The main difficulty in using this method is the need for 96-hour periods of dry weather.

Information from an interview with Paul Barden, Deputy Director of Engineering Services, and Charlie Jewell, Project Director, Boston Water and Sewer Commission, August 15, 2002.

CONDUCTING WATER QUALITY TESTS

When dry-weather flow is observed, visual or odor observations (e.g., observation of pieces of toilet paper, strongly colored or very muddy discharge, or the odor of sewage or chemicals) may provide enough information to determine that the discharge is illicit and to identify the likely source. If not, water quality sampling can be used to determine whether the flow is likely to have resulted from an illicit discharge.

Certain water quality parameters can serve as indicators of the likely presence or absence of a specific type of discharge. Some of these parameters can be measured in the field with probes or test kits; others must be analyzed for in the laboratory. A wide variety of water quality parameters can be measured in an IDDE program, and many references exist that describe these parameters. Some of the more commonly used and useful parameters are summarized in Table 1, which focuses on parameters suggested in Pitt et al. (1993) and the subset of those recommended in EPA's Phase II regulations.

CASE STUDY: WINOOSKI, VERMONT

USE OF OPTICAL BRIGHTENERS

The city of Winooski, Vermont has found that testing for optical brighteners is an efficient, cheap way to determine the presence of a non-storm water discharge in a particular outfall. Optical brighteners are used in laundry detergents and thus serve as a marker for household or commercial laundry discharges. These tests are extremely sensitive to the presence of detergents.

To perform an optical-brightener test, an untreated cotton pad ($9/100 pads) surrounded by a mesh bag or a suet cage is placed in a storm drain outlet, manhole, or catch basin that has been found to have dry-weather discharge and left for a certain period of time (i.e., 5-7 days). The cotton pad is then brought back to the lab and placed under a UV lamp (approximately $200) in a dark room. A blue color indicates the presence of detergents, signifying either illegal dumping, a direct illicit connection, a leaking sewer, or leakage from a failed septic system. If the test is positive for detergents, further tests need to be performed to determine the source.

Information from an interview with Tim Grover, Water Pollution Control Facility Superintendent, City of Winooski, August 9, 2002.

TABLE 1 **WATER QUALITY TEST PARAMETERS AND USES**

Water Quality Test	Use of Water Quality Test	Comments
Conductivity	Used as an indicator of dissolved solids	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Typically measured in the field with a probe
Ammonia	High levels can be an indicator of the presence of sanitary wastewater	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Used very often and equipment is readily available; Boston, MA uses a field test kit (see case example)
Surfactants	Indicate the presence of detergent (e.g., laundry, car washing)	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Boston, MA uses a field test kit (see case example)
pH	Extreme pH values (low or high) may indicate commercial or industrial flows; not useful in determining the presence of sanitary wastewater (which, like uncontaminated baseflows, tends to have a neutral pH, i.e., close to 7)	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Typically measured in the field or lab with a probe
Temperature	Sanitary wastewater and industrial cooling water can substantially influence outfall discharge temperatures. This measurement is most useful during cold weather.	- Pitt et al. 1993 suggested parameter - Measured in the field with a thermometer or probe
Hardness	Used to distinguish between natural and treated waters	- Pitt et al. 1993 suggested parameter
Total Chlorine	Used to indicate inflow from potable water sources; not a good indicator of sanitary wastewater because chlorine will not exist in a "free" state in water for long (it will combine with organic compounds)	- Pitt et al. 1993 suggested parameter
Fluoride	Used to indicate potable water sources in areas where water supplies are fluoridated	- Pitt et al. 1993 suggested parameter
Potassium	High levels may indicate the presence of sanitary wastewater	- Pitt et al. 1993 suggested parameter
Optical Brighteners (Fluorescence)	Used to indicate presence of laundry detergents (which often contain fabric whiteners, which cause substantial fluorescence)	-Pitt et al. 1993 suggested parameter -Used by City of Winooski, VT (see case example)
Bacteria (fecal coliform, *E. coli,* and/or *enterococci)*	Used to indicate the presence of sanitary wastewater	- Used by NHDES (see case example in chapter 5)

REFERENCES: CHAPTER 4

Clark County (WA) Public Works. 2000. *Illicit Discharge Screening Project: Annual Summary 2000.* *http://www.co.clark.wa.us/site/clean/download/2000rept.pdf*

Colorado Department of Public Health and Environment, Water Quality Control Division. October 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal storm water discharge permit.* *http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html*

Donlon, A. 2001. *2000 Coastal Illicit Connection Remediation Grant Program: Final Report.* New Hampshire Department of Environmental Services and New Hampshire Estuaries Project. R-WD-01-10. *http://www.des.state.nh.us/wmb/was/nhep2000.pdf*

Interview with Paul Barden and Charlie Jewell, BWSC, August 15, 2002.

Interview with Andrea Donlon, NHDES, July 29, 2002.

Interview with Tim Grover, City of Winooski, VT, August 9, 2002.

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* *http://www.wef.org*

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San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

Sargent, D. and W. Castonguay. 1998. *An Optical Brightener Handbook.* *http://www.mvpc.org/services_sec/mass_bays/optical_handbook.htm*

Tuomari, D. 1999. *Dos and Don'ts on Implementing a Successful Illicit Connection Program*. Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851.

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Identifying Illicit Connections.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_2.cfm*

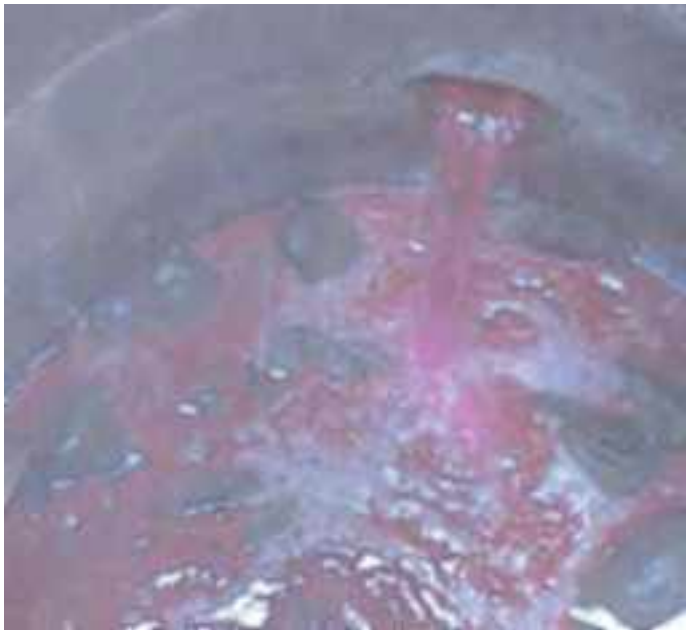
5 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: TRACING THE SOURCE OF AN ILLICIT DISCHARGE

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 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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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 non-compliance. 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)

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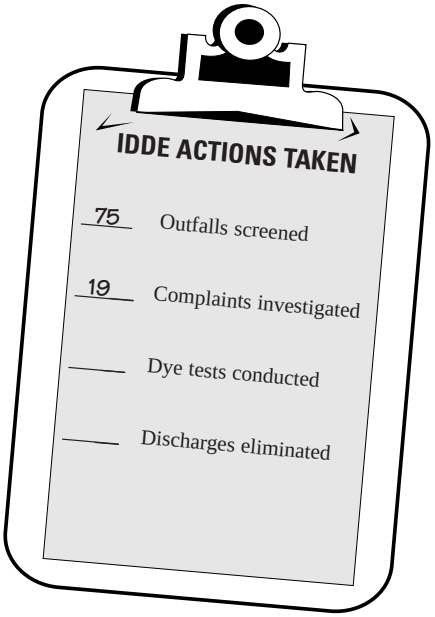
7 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: EVALUATION OF THE IDDE PROGRAM

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.

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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. 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.

Many public employees can play an important role as partners in the detection and/or prevention of illicit discharges.

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.

If made aware of environmental issues, the general public can help mitigate or prevent problems.

- 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
- 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.

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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*

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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

Illicit Discharge Detection and Elimination (IDDE)

Employee Training Record

Milford, Massachusetts

Date of Training: _____

Duration of Training: _____

Name	Title	Signature

ENVIRONMENTAL PARTNERS

An Apex Company

ENVIRONMENTAL PARTNERS

— An Apex Company —

1900 Crown Colony Drive, Suite 402

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APPENDIX M

Stormwater Pollution Prevention Plans (SWPPPs)

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Highway Department Facility

Town of Milford

June 2020

ENVIRONMENTAL PARTNERS

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SECTION 1 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) has been developed by the Town of Milford to address the requirements of the United States Environmental Protection Agency's (USEPA'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.

The 2016 Massachusetts MS4 Permit requires 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 Measure 6, Good Housekeeping and Pollution Prevention for Permittee Owned Operations, the permittee is required, per Section 2.3.7.b of the 2016 Massachusetts MS4 Permit (page 50-54), to:

> *...develop and fully implement a SWPPP for each 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 as determined by the permittee.*
>
> *The SWPPP shall contain the following elements:*
> 1. *Pollution Prevention Team*
> 2. *Description of the facility and identification of potential pollutant sources.*
> 3. *Identification of stormwater controls*
> 4. *Management practices including: minimize or prevent exposure, good housekeeping, preventative maintenance, spill prevention and response, erosion and sediment control, management of runoff, management of salt storage piles or piles containing salt, employee training, and maintenance of control measures.*
> 5. *Site inspections*

This SWPPP accomplishes these requirements by:

- Providing an inventory of the materials and equipment at a facility that have the potential to cause stormwater pollution, and identifying locations where these materials are stored.
- Describing how stormwater is managed at a facility, including: engineered storm drain system conveyance; on-site pretreatment, treatment and infiltration systems; and discharges to surface water directly from the site.

- Reviewing activities that occur at the facility that represent a potential for stormwater pollution.
- Describing the Best Management Practices (BMPs) that will be implemented at the facility to reduce, eliminate and prevent the discharge of pollutants to stormwater.
- Identifying the employees responsible for developing, implementing, maintaining, and revising, as necessary, this SWPPP.
- Establishing a schedule and description of site inspections to be conducted at the facility to determine if the SWPPP is effective in preventing the discharge of pollutants.
- Serving as a tool for the facility employees, including a place to maintain recordkeeping associated with these requirements.

SECTION 2 DETAILED FACILITY ASSESSMENT

2.1 FACILITY SUMMARY

The Highway Department Facility is located at 30 Front Street, Milford, Massachusetts and is owned and operated by the Town of Milford. The Locus Map in Figure 1 shows the location of the facility within the Town of Milford.

The Highway Department is primarily responsible for activities at, and maintenance of, the facility.

2.2 SITE INSPECTION

The site inspections associated with the development of this SWPPP were completed on June 23 and September 2, 2020. The inspection were conducted by Annie Tucker, Environmental Scientist of Environmental Partners. Site tour and information was provided by Scott Crisafulli, Highway Surveyor.

During the site inspections, information related to activities at the site, vehicles stored at the site, fueling operations, material storage, transport of oil and other materials, and spill history were gathered.

2.3 POLLUTION PREVENTION TEAM

A Pollution Prevention Team for Highway Department Facility has been created and designated the task of developing, implementing, maintaining, and revising, as necessary, the SWPPP for this facility. Listed below are Pollution Prevention Team members and their respective responsibilities.

Responsibilities assigned to one or more members of the Pollution Prevention Team include:

- Implementing, administering and revising the SWPPP
- Regularly inspecting stormwater control structures
- Conducting stormwater training
- Recordkeeping

Leader: Scott Crisafulli **Office Phone:** (508) 473-1274
Title: Highway Surveyor

Responsibilities: Considers all stages of plan development, inspections, and implementation; coordinates employee training programs; maintains all records and ensures that reports are submitted; and oversees sampling program. Responsible for certifying the completeness and accuracy of the SWPPP.

Member: Mike Dean **Office Phone:** (508) 634-2317
Title: Town Engineer

Responsibilities: Implements the preventative maintenance program; oversees good housekeeping activities; serves as spill response coordinator; conducts inspections; assists with employee training programs; and conducts sampling/visual monitoring.

2.4 FACILITY DESCRIPTION

The primary purpose of the Highway Department Facility is to maintain the Town of Milford's roads, infrastructure, and facilities. Activities that occur at the site are described in SECTION 2.7

The facility covers approximately 5.44 acres, and contains the structures and other features shown on the Site Map in Figure 2 and described in detail in the following sections. Components shown on the Site Map include:

- Location of the engineered drainage system, including catch basins, drain manholes, and treatment BMPs
- Outfalls to a receiving water and the name of the receiving water
- Direction of surface water flow
- Structural stormwater pollution control measures
- Location of floor drains
- Vehicle washing areas
- Vehicle fueling areas
- Oil/water separators
- Aboveground storage tanks (indoors and outdoors)
- Underground storage tanks
- Salt storage areas
- Materials stockpiles
- Waste disposal areas

2.5 FACILITY STRUCTURES

Vehicle Storage and Maintenance

Buildings at Highway Department Facility are used to provide Town of Milford personnel with heated, covered areas in which to complete minor maintenance, oil changes, and preparation of vehicles, equipment, and tools for use at locations around the Town of Milford.

The Vehicle Storage Garage is located in the southeast portion of the property. Vehicles, equipment, signs, and tools are stored in this structure. This building contains eight floor drains as well as a floor drain in each of the building's two bathrooms. The floor drains discharge to an oil/water separator located west of the building that discharges to the sanitary sewer system. This building is heated with natural gas.

The Vehicle Maintenance Garage is located in the center of the property. Activities in this structure include minor vehicle and equipment maintenance, oil changes, and vehicle and equipment storage. The Milford Parks Department utilizes a portion of this garage to store equipment and tools. This building contains five floor drains in the large garage and one trench grate floor drain in the smaller maintenance garage. Additionally, there are three bathrooms with floor drains in this structure. The floor drains discharge to an oil/water separator located to the east of the building that discharges to the sanitary sewer system. This building is heated with natural gas.

Both the Vehicle Storage Garage and the Vehicle Maintenance Garage store latex paint, spray paint, and similar products. Petroleum-based products, including gasoline and motor oil are stored in the buildings as well. These hazardous products are properly stored in flammable materials storage cabinets or have other containment.

Vehicle Wash Bay

The Town of Milford maintains a vehicle wash bay in the southeast corner of the Vehicle Storage Garage. The building is fully-enclosed and contains a deep sump catch basin that drains to an oil/water separator to the east of the Vehicle Storage Garage that discharges to the sanitary sewer system.

Storage of Deicing Materials

Road salt at the Highway Department Facility is stored in the Salt Shed year-round and in the Salt and Sand Shed during the winter months. During the summer months, vehicles are stored in the Salt and Sand Shed. The Salt Shed is located in the northwest portion of the property and the Salt and Sand Shed is located in the western portion of the property. These buildings are covered and the materials are fully contained within the buildings. The good housekeeping measure used to minimize the exposure resulting from adding to or removing stored materials include sweeping the loading/unloading area regularly or when salt has accumulated on the paved surface.

Storage of Road Deicing Equipment

The Town of Milford utilizes a number of salt spreaders and snow plows on its vehicles to adequately maintain roads. These pieces of equipment are stored outside the Vehicle Maintenance Garage and within the Vehicle Storage Garage. The equipment is suspended off the ground so that it can easily be cleaned, inspected, and maintained, but is protected from the elements. Snow plows are also stored outside the Salt and Sand Shed.

Administrative Buildings

The Highway Department Facility administrative offices are located in the Office Building. This building adjoins the north side of the Vehicle Maintenance Garage. Offices, a conference room, two kitchens, two bathrooms, and a break room are contained within this building. There are no floor drains in the Office Building.

2.5.1 Additional Site Features

Aboveground Storage Tanks

Aboveground storage tanks (ASTs) at the Highway Department Facility are used for storage of petroleum products and de-icing materials. An inventory of significant materials is included in SECTION 2.12.

Two AST are located to the northwest of the Salt Shed for storage of Safe Roads liquid deicing solution (32% calcium chloride solution). These ASTs are not covered and each store 2,500 gallons of Safe Roads.

The third AST stores 214 gallons of diesel fuel to power the generator. This AST is located beneath the generator, which is southwest of the Vehicle Maintenance Garage. The fuel tank is not covered. However, the tank is double-walled.

Waste oil is stored in the fourth AST, in the southwest corner of the Vehicle Maintenance Garage. This tank is fully enclosed by the building. Roof drainage discharges to the north and south sides of the building via gutters. This tank stores 275 gallons of waste oil and has secondary containment.

The remaining eight AST are 55-gallon drums. Five 55-gallon ASTs store motor oil and are located in the center of the Vehicle Maintenance Garage on containment pallets. One 55-gallon AST stores hydraulic fluid and two 55-gallon ASTs store motor oil. These three AST are located within the Chemical Storage Room of the Vehicle Maintenance Garage. All eight 55-gallon ASTs are fully enclosed within the Vehicle Maintenance Garage and roof drainage discharges to the north and south side of the building.

Fuel Islands

An island containing two fuel pumps for gasoline and diesel are located in the northeast portion of the property, and are used on a 24-hour basis for fueling of all Town of Milford vehicles. The island is not covered. Access to these fuel pumps is regulated by a key and personal identification number. There is also an alarm system in place. The diesel and gasoline fuel is stored in two 10,000-gallon, subsurface tanks.

Emergency Generators

An emergency Kholer generator is located to the southwest of the Vehicle Maintenance Garage and provides backup power to the facility during outages. The generator is uncovered. However, it is located on a pervious surface and has double-walled containment for the 214 gallons of diesel. Non-structural controls applicable to this equipment are addressed in SECTION 3 of this SWPPP.

Oil/Water Separators

The Town of Milford maintains two oil/water separators at the Highway Department Facility. Floor drains in all areas where oil materials are used and/or where vehicles are stored receive pretreatment via these oil/water separators.

One oil/water separator is located west of the Vehicle Storage Garage and receives discharge from the floor drains in the Vehicle Storage Garage. This pretreatment structure has a cleanout manhole, and is pumped out twice a year. The Highway Department is responsible for contracting this work, and maintains records on the pump out activities. The structure has an outlet pipe that discharges to the Town's sanitary sewer system.

The second oil/water separator is located east of the Vehicle Maintenance Garage. This pretreatment structure has a cleanout manhole, and is pumped out twice a year. The Highway Department is responsible for contracting this work, and maintains records on the pump out activities. The structure has an outlet pipe that discharges to the Town's sanitary sewer system. This oil/water separator receives discharge from the floor drains in the Vehicle Maintenance Garage.

Materials for Use by Residents

The Town of Milford maintains a stockpile of compost for use by Town residents. This stockpile is located south of the Vehicle Maintenance Garage. It is uncovered. However, the stockpile has concrete barriers on three sides and is located in an area that does not receive a substantial amount of runoff.

Parking Areas

There are several designated parking areas at the Highway Department Facility, each of which is an impervious surface. These parking areas are used primarily by visitors to the Highway Department, Town-owned cars for daily use by Highway Department employees, and employees' personal vehicles. Highway Department trucks and/or heavy equipment are not kept in these parking areas.

The Office Building has a total of 22 parking spaces surrounding the building. Additionally, there are seven parking spaces south of the Vehicle Maintenance Garage. The total number of parking spaces at the Highway Department Facility is 29.

2.6 SITE DRAINAGE

No stormwater from adjacent properties impacts the Highway Department Facility property.

Sheet Flow

The Highway Department property is sloped east, toward the Charles River. Drainage from impervious surfaces at the Facility is directed partially to the east of the property and into the Charles River. Additionally, some drainage is directed to Central Street where it is collected by catch basins that discharge to the Charles River. Some sheet flow also discharges to the infiltration basin in the southeast of the property.

Engineered Drainage

Engineered drainage at the Highway Department Facility includes seven catch basins, three manholes, one inlet, one outlet, and three outfalls. Maintenance of the catch basin structures, including sediment removal, is completed by the Highway Department. Part of the stormwater system on the property interconnects with the stormwater system from parcels west of this facility. The point of interconnection is the manhole south of the Salt Shed.

This facility contains an infiltration basin in the southeast corner of the property. The basin receives discharge from a nearby catch basin and from sheet flow. The basin discharges into the Charles River.

2.6.1 Receiving Waters

The final point of discharge for stormwater from this site is the Charles River. This surface water has been categorized as a 303(d) List (Impaired) surface water. The impairment of this river, assigned the unique identifier MA72-33, is considered a Category 4A water body, meaning that more than one designated use is impaired and that a Total Maximum Daily Load (TMDL) has been completed.

Impairments of this water body are shown in Table 1, below.

Table 1: Impaired Waters Receiving Drainage from the Facility
Highway Department Facility

Water Body Name	ID	Category	Impairment(s)
Charles River	MA72-33	4A	• (Physical substrate habitat alterations*) • Escherichia Coli (TMDL 32364) • Nutrient/Eutrophication Biological Indicators (TMDL 40317)

*TMDL not required (non-pollutant)

The activities and materials stored at the Highway Department Facility have the potential to affect these impairments.

The good housekeeping practices, preventative maintenance, and Best Management Practices implemented at the facility are methods to limit potential negative impacts to stormwater. These practices are discussed in SECTION 3 of this SWPPP.

2.6.2 Applicable TMDLs

Water bodies identified as Category 4A, as shown in Table 1, are impaired or threatened for the defined uses. The following TMDLs have been developed:

- Escherichia Coli (E. Coli) TMDL (Final Pathogens TMDL for the Charles River Watershed, January 2007)
- Nutrient/Eutrophication Biological Indicators TMDL (Final TMDL for Nutrient in the Upper/Middle Charles River, May 2011)

2.7 SITE ACTIVITIES

The following activities occur at the facility:

- Facility or building maintenance
- Fueling operations
- Landscaping
- Chemical unloading, handling, and storage (including paint and flammables)
- Sand storage

- Salt storage
- Tool storage
- Vehicle and equipment storage
- Vehicle and equipment maintenance/repair (including oil changes)
- Vehicle and equipment washing
- Waste oil storage

Below is a discussion of site activities and the potential pollutant sources associated with each, as well as measures taken to minimize pollution. Locations of each activity are shown on the Site Plan (Figure 2).

The Highway Department Facility does not store hazardous materials other than those noted previously, and no obsolete vehicles or other potential sources of pollutants are kept in any structure at the Highway Department Facility.

A solvent-based parts washers is used at the Highway Department Facility. The parts washer is made by Safety Kleen and is stored in a drum, fully enclosed in the maintenance garage. Floor drains within this garage discharge to an oil/water separator. Any hazardous waste materials are either collected by a third party vendor contracted by the Town of Milford, or collected at the annual Household Hazardous Waste (HHW) Day that is hosted at the Highway Department Facility by the Milford Board of Health. Waste materials from the Highway Department Facility's operations that may be collected at the annual HHW Day include used motor vehicle fluids, such as used antifreeze and brake fluid. These materials are properly labeled and stored using appropriate Best Management Practices between the time of generation and disposal.

The Highway Department does not apply or utilize fertilizers, herbicides, or pesticides. No fertilizers, herbicides, or pesticides are stored at the Highway Department Facility.

2.7.1 Compost Production or Storage

Potential Sources of Stormwater Pollution

Compost production and storage locations present a threat to contaminate stormwater with pathogens, including bacteria and viruses, nutrients, including phosphorus and nitrogen, fertilizers, pesticides and sediments.

Pollution Prevention

Compost storage areas shall be located and properly labeled within a designated stockpile area that is covered and contained to prevent exposure to precipitation. If the storage area is unable to be covered it should be contained within an area contained by silt fence or concrete barriers and located in an area that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody. The compost shall be kept in neat, separate piles from all other materials.

2.7.2 Stockpiles and Sand Storage

Potential Sources of Stormwater Pollution

Sand stored in piles for use during construction and during winter plowing and deicing activities represents a potential source of stormwater pollution. Stockpiled materials such as gravel, loam, and crushed rock represent a similar source of pollution. When stored unprotected outdoors, sand piles and material stockpiles are exposed to precipitation. When the resulting eroded material enters the stormwater system, the sediment can quickly fill the sumps of catch basin structures, rendering them ineffective.

Mixing sand and salt for use in deicing activities poses an additional element of stormwater pollution, particularly if the mixing area is not fully enclosed and protected from the elements.

Pollution Prevention

To avoid contamination of stormwater by sand and other stockpiled materials, erosion and sediment control measures should be implemented at each storage site. When planning a location for a stockpile, a relatively level site away from slopes and water features should be selected.

Stockpiles can be stabilized by seeding or mulching if they are to remain exposed for more than two weeks, or can be covered with impermeable sheeting to protect the material from rainwater. If the stockpile location becomes a permanent storage site for sand, a roofed structure should be considered to reduce erosion.

Sediment barriers should be placed around the perimeter of the storage site to prevent any runoff carrying sand from entering storm drains and surface waters. If the weather becomes dry and windy, regular light watering of the stockpile and surrounding area will provide effective dust control. Please refer to SOP 6, "Erosion and Sedimentation Control," included in Appendix A, for more information.

Sand that has been mixed with salt for use during winter plowing and deicing activities should always be stored in an enclosed and covered salt shed. Salt sheds should be constructed on level ground with an impervious base on which to store the salt/sand mixture. Under no circumstances should loose salt/sand mix be stored outside and unprotected. All mixing of salt and sand should take place within the salt shed or other covered, enclosed area.

Ensuring that the storage area is regularly swept and kept clean is an important good housekeeping practice.

2.7.3 Salt Storage

Potential Sources of Stormwater Pollution

Salt stored in piles for use during winter plowing and deicing operations represents a potential major contributor to stormwater pollution. When stored unprotected outdoors, salt is exposed to precipitation, causing leachate with high chloride that can be discharged to the receiving water. Salt

delivery and loading activities can contribute pollutants to stormwater if the material is not handled with care, and if spills from handling operations are not promptly cleaned up.

Pollution Prevention

To prevent stormwater pollution, all salt piles should be enclosed and covered in sheds to prevent exposure to precipitation. Salt sheds should be constructed on level ground with an impervious base on which to store the salt. The shed should prevent disturbance or migration of the salt by wind.

During delivery and loading activities, salt should be transferred to and from vehicles within the salt shed, whenever possible. Any spills during unloading and loading events should be tended to without delay. Ensuring that the salt storage area is regularly swept and kept clean is an important good housekeeping practice.

If it is not feasible to fully enclose the salt pile, the salt should be stored on an impervious base and covered with an impermeable membrane material. Under no circumstances should loose salt be stored outside and exposed to precipitation.

The area should not be hosed down to a storm drain as a cleaning method. To further limit stormwater pollution, an independent runoff collection system may be installed in the area of the salt storage to collect and convey runoff either directly to a treatment best management practice or to a sanitary sewer system, with approval from the operator of the sanitary sewer system.

2.7.4 Vehicle and Equipment Storage

Potential Sources of Stormwater Pollution

Vehicle and equipment storage activities are a potential source of pollution due to the diesel fuel, gasoline, oil, hydraulic fluid, antifreeze and similar hazardous material or fuel the machinery may contain. In addition, vehicles or machinery may pick up pollutants during the course of offsite activities or at other facilities, and then deposit these pollutants at the storage facility.

Pollution Prevention

Regular visual inspection and maintenance of vehicles and equipment can greatly reduce the potential for pollution by finding and addressing leaks before pollution of the environment occurs. When in storage, vehicles and equipment should be kept on a covered slab or within a building with a common drain. Discharge to this drain shall be managed by an oil/ water separator (refer to SOP 11, “Oil/Water Separator Maintenance”, included in Appendix A) to remove oils and gasoline. Vehicle washing activities shall not be completed in areas served by an oil/water separator.

No equipment should be kept in an area where leaks could result in pollutants entering catch basins, channels leading to outfalls, or the engineered storm drain system. If vehicles and equipment are stored outdoors, catch basins or engineered drainage system structures should include devices intended to remove oils and sediments prior to entering the system. These treatment devices should be inspected and replaced at the frequency recommended by the manufacturer.

2.7.5 Vehicle and Equipment Maintenance/Repair

Potential Sources of Stormwater Pollution

Vehicle and equipment maintenance and repair often requires the use of harmful liquids such as fuels, oils, and lubricants, and has the potential for producing dust, scrap and by-products that may contain pollutants. Both accidental and purposeful spillage, i.e., a leaky oil pan needing repair vs. draining the pan during an oil change, can lead to situations where pollutants can potentially enter stormwater runoff if the situations are not approached properly. Although there is little potential for effecting stormwater, it should be noted that hazardous gases can be produced during maintenance and repair as well.

Pollution Prevention

Proper maintenance and repair for vehicles and equipment shall include a preliminary assessment of potential pollutant sources. This assessment shall be used to determine the best means of containing any potential spills or by-products of the situation at hand. Approved containers shall be used to capture hazardous liquids to then be disposed of according to applicable MassDEP and USEPA guidelines. If the project may produce hazardous dust that could come in contact and mix with any liquids, the proper containment shall be utilized.

Due to heavy metal accumulation in antifreeze, brake fluid, transmission fluid, and hydraulic oils, these liquids should not be disposed of in the sanitary sewer system. Contaminated parts removed or replaced on any vehicles or equipment shall be disposed of properly.

All work shall take place on a covered slab or within a building with a common drain. Discharge to this drain shall be managed by an oil/ water separator (refer to SOP 11, "Oil/Water Separator Maintenance", included in Appendix A) to remove oils and gasoline.

Maintenance and repairs shall not take place in areas prone to stormwater runoff or where pollutants could enter catch basins, channels leading to outfalls, or an engineered storm drain system. All catch basins or engineered drainage systems on site that could be affected by accidental spills should include devices intended to remove oils and sediments prior to entering the system. These treatment devices should be inspected and replaced at the frequency recommended by the manufacturer.

2.7.6 Vehicle and Equipment Washing

Potential Sources of Stormwater Pollution

Vehicle and equipment washing activities are a potential source of pollution not only from petroleum products and pollutants deposited on the exterior of the equipment, but also from nutrients and sediment being washed into water bodies from the act of washing itself. Although some cleaning agents are becoming environmentally friendly, many still contain regulated contaminants. Due to the possibility for multiple types of pollutants, vehicle and equipment washing activities have a high potential for degrading stormwater quality.

Pollution Prevention

Outdoors, the use of a tight tank or other similar structure that can contain the wash water is ideal. If the wash water cannot be contained, it shall not be allowed to directly enter water bodies. Use phosphate free detergents that do not contain regulated contaminants, and avoid using solvents where the wash water may enter a sanitary sewer. Pervious surfaces may be used to promote infiltration and treatment before wash water enters the groundwater, but wash water coming from impervious pavement shall be treated to remove nutrients and petroleum products before entering an engineered storm drain system. Infiltration shall not be used within wellhead protection areas or other protected resource areas. Power washing, steam cleaning and engine and undercarriage washing shall not occur outdoors. Heavily soiled or vehicle dirtied from salting shall not be washed outdoors. All adjacent catch basins shall have a sump and be cleaned periodically, (refer to SOP 3, "Catch Basin Inspection and Cleaning", included in Appendix A). All debris and particulate accumulation shall be removed and swept clean in all outdoor washing areas.

Washing vehicles and equipment indoors in the proper facilities is preferred over washing outdoors whenever possible. Indoor facilities shall have a common drain and it shall utilize a tight tank or other containment device to hold the wash water. The use of detergents shall be avoided and when the use of detergents cannot be avoided, use detergents free from phosphates and regulated contaminants. Detergents shall not be used when the discharge of this drain is controlled by an oil/ water separator (refer to SOP 11, "Oil/Water Separator Maintenance", included in Appendix A). All drains that discharge directly to a water body of engineered storm drain system shall be plugged or abandoned. Dry clean-up methods such as vacuuming and sweeping shall be used whenever possible to avoid washing down floors with water.

For both outdoor and indoor washing, maintain absorbent pads and drip pans to collect spills and leaks observed during washing activities. Refer to SOP 4, "Spill Response and Cleanup Procedures" included in Appendix A for more information.

Washing of all facility vehicles is completed in the vehicle wash bay within the Vehicle Storage Garage at the Highway Department Facility. Wastewater from vehicle washing operations is collected by a catch basin within the wash bay that discharges to an oil/water separator that is maintained by the Highway Department.

Salt and sand spreaders stored at the Highway Department Facility are occasionally pressure washed on site.

2.7.7 Waste Oil Storage

Potential Sources of Stormwater Pollution

When not stored properly, waste oil can be a potential source of petroleum in stormwater. Waste oil containers can leak, and spills can occur during transportation.

Pollution Prevention

All waste oil containers should be properly labeled and stored with secondary containment. Containers should be regularly inspected for rust, leaks, or other signs of deterioration. Defective

containers should be promptly removed and replaced. A spill response kit should be located wherever waste oil is stored. Facility personnel should know where the spill kit is located and be familiar with the procedures outlined in SOP 4 "Spill Response and Cleanup Procedures" in Appendix A. Used oil filters should also be properly disposed.

Care should be taken when transferring used oil to and from storage containers. For additional information see SOP 7 "Fuel and Oil Handling Procedures" found in Appendix A.

Waste oil should be stored indoors or under a covered structure to prevent exposure to precipitation. Floor drain in waste oil storage areas should drain to an oil/water separator rather than the storm drain system. See SOP 11 "Oil/Water Separator Maintenance" in Appendix A for further information.

When possible, steps should be taken to recycle waste oil or reduce the amount generated.

2.8 VEHICLE AND EQUIPMENT INVENTORY

Vehicles and major equipment stored and maintained at the facility are shown in Table 2.

Table 2: Vehicle Inventory
Highway Department Facility

Vehicle Make & Model	Truck Number	Vehicle ID
1989 International Cab/Chassis Truck	9	1HTZLDBR6KH645759
1994 Ford F350 Pickup Truck	18	2FTHF36M0RCA3537
1995 Sullivan Heavy Trailer (Compressor)	C1	14336A
1996 Caterpillar 938 Loader	L3	1KM01634
1996 International Dump Truck	3	1HTGBAAR8TH326228
1999 Caterpillar 928G Loader	L2	06XR01947
1999 International Dump Truck	7	1HTGBADR0XH209258
1999 International Dump Truck	13	1HTGBADR6XH6614536
1999 RPM LM220 Snowblower	B1	LMWD2-663R
2000 Int'l Dump Truck	11	1HTGBADR4YH265897
2000 Leach Leaf Vacuum	V2	4V2DC2HE2YN256429
2001 Ford F350 Dump Truck	12	1FDWF37F61ED78280
2001 Ford F550 Pickup Truck	16	1FDAF57F01EC19051
2003 Caterpillar Loader / Backhoe	BH1	7BJ77361
2005 GMC Leaf Truck	V4	1GDM7F1365F515349
2005 GMC Leaf Truck	V3	1GDM7F13X5F532574
2007 Ford F550 Pickup Truck	10	1FDAF57P47EB31248
2008 Peque Utility Trailer	TR1	4JADS20298G118131
2008 Peterbilt 340 Hook & Load Truck	4	2NPRHN8X98M748297
2008 Trackless Sidewalk Tractor	T3	MT5T3585

Vehicle Make & Model	Truck Number	Vehicle ID
2009 Ford F150 4x4 XLT SS CRW	2	1FTRW14889FA52725
2011 Ford F250 Tool Truck	15	1FTBF2B64BED08539
2011Freightliner M2106 Sweeper	S1	1FVACXDT0BDAY6597
2012 Holder Utility/Sidewalk Tractor	T6	53400202
2012 John Deere Front End Loader	L4	1DW544KZPCD642315
2012 Wacker Neuson Roller	R1	20116455
2012 Wacker Neuson Sidewalk Loader	T5	3011650
2014 Elgin Pelican Sweeper	S2	NP3088
2014 Ford F450 Dump Truck	8	1FDUF4HT2EEB53068
2014 Lee Boy 1000F Paver	P1	-
2014 Lee Boy L250 Tack Distributor & Utility Trailer	TR2	1BPAA1118E1309349
2014 Peterbilt Dump Truck 10 Wheeler	6	2NP3LJ0x3EM233705
2015 Chevrolet Silverado 2500 Pickup Truck	1	1GC1KVEG5FF644584
2016 Ford F250 4x4 SRW Pickup Truck	17	1FTBF2B61GEB33349
2016 John Deere 26 G Mini Excavator w/ Bucket	E1	1FF026GXHFK261311
2016 ODB Truck Mounted Leaf Vacuum	V3	7003
2016 ODB Truck Mounted Leaf Vacuum	V4	7004
2016 Peterbilt 348 Dump Truck	14	1HTGBADR6XH661456
2016 Peterbilt Dump Truck	13	2NP3jj8X4GM307341
2017 Donovan Trailer	TR3	259BTET0HA160247
2017 Peterbilt Tractor	19	1XPTDP0X3HD448307
1985 Caterpillar D7	D7	-
1986 Mack	20	-
2018 Prinoth SW4S	T1	900200737
2019 John Deere 2960M Mower	M2	1TC960MGAT060185
2020 Peterbilt 348	-	2NP3HJ8X7LM653678
2020 John Deere 624L Loader	L2	1DW624LzTLF705361

2.9 LOCATION OF LEAK AND SPILL CLEANUP MATERIALS

Leak and spill cleanup materials are stored at the Highway Department Facility in order to facilitate rapid response. Locations and types of leak and spill cleanup materials are identified in Table 3.

Table 3: Leak and Spill Cleanup Materials
Highway Department Facility

Building or Area	Location	Materials Available
Vehicle Maintenance Garage	North interior wall of small maintenance garage	Speedi Dri
Vehicle Maintenance Garage	Small maintenance garage	Absorbent Mats

2.10 ALLOWABLE NON-STORMWATER DISCHARGES

A non-stormwater discharge is defined as any discharge or flow to the engineered storm drain system that is not composed entirely of stormwater runoff.

Allowable non-stormwater discharges that could occur at this facility include:

- Firefighting activities
- Water line flushing
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(20))
- Uncontaminated pumped ground water
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Flows from riparian habitats and wetlands
- Street wash waters

It has been determined that the above non-stormwater discharges at the Highway Department Facility do not represent a significant contribution of pollution to the MS4 or the waters of the United States. Therefore, these are considered to be authorized under the current MS4 permit.

2.11 EXISTING STORMWATER MONITORING DATA

There has been no historical stormwater monitoring data recorded at the Highway Department Facility. If new analytical stormwater sampling occurs, it should be recorded in Table 4.

Table 4: Existing Stormwater Monitoring Data
Highway Department Facility

Building or Area	Location	Type of Monitoring

2.12 SIGNIFICANT MATERIAL INVENTORY

Materials stored include those specified in SECTION 2.7, "Site Activities". An inventory of these materials at the Highway Department Facility is included in Table 5, which also reviews the likelihood for each identified material to come in contact with stormwater. The type of container has also been identified. Oil, gasoline, and other petroleum-based materials are listed separately in the table.

Table 5: Significant Material Inventory
Highway Department Facility

Material	Storage Location	Quantity	Potential Pollutant	Covered (C) or Enclosed (E)	Likelihood of Contact with Water
Petroleum-Based Compounds					
Diesel fuel (generator)	Generator	412 gallons	Petroleum hydrocarbons	*	Low
Diesel fuel (fueling island)	Fueling Island, subsurface tank	10,000 gallons	Petroleum hydrocarbons	E	Low
Gasoline (garage)	Vehicle Maintenance Garage	30 gallons	Petroleum hydrocarbons	E	Low
Gasoline (fueling island)	Fueling Island, subsurface tank	10,000 gallons	Petroleum hydrocarbons	E	Low
Hydraulic fluid	Chemical Storage Room	70 gallons	Petroleum hydrocarbons	E	Low
Motor oil	Vehicle Maintenance Garage	385 gallons	Petroleum hydrocarbons	E	Low

Material	Storage Location	Quantity	Potential Pollutant	Covered (C) or Enclosed (E)	Likelihood of Contact with Water
Transmission fluid	Vehicle Maintenance Garage	9 gallons	Petroleum hydrocarbons	E	Low
Waste oil	Vehicle Maintenance Garage	275 gallons	Petroleum hydrocarbons	E	Low
Other: Grease	Chemical Storage Room	30 gallons	Petroleum hydrocarbons	E	Low
Total Volume of Oil at Facility = 21,211 Gallons					
Non-Petroleum Significant Materials					
Antifreeze	Vehicle Maintenance Garage	10 gallons	Ethylene glycol; potential source of BOD	E	Low
Spray lubricant	Vehicle Maintenance Garage	3 canisters	Petroleum hydrocarbons	E	Low
Aggregates	Stockpile Area	4 tons (gravel) + 40 yards (crushed stone)	Sediments	*	High
Asphalt (cold patch)	Stockpile Area	1 ton	Sediments	*	High
Deicer- calcium chloride (Safe Roads)	North of Salt Shed	5,000 gallons	Chlorides	*	Low
Deicer- road salt	Salt Shed	2,400 yards	Chlorides	C	Low
Compost	South of the Vehicle Maintenance Garage	40 yards	Sediments	*	High
Paint, Latex	Vehicle Storage Garage	3 gallons	Petroleum constituents, including volatile and semivolatile organic compounds	E	Low
Paint, oil-based	Vehicle Storage Garage	3 gallons	Petroleum constituents, including volatile and semivolatile organic compounds	E	Low
Paint, spray	Vehicle Maintenance Garage and Vehicle Storage Garage	30 canisters	Petroleum constituents, including volatile and semivolatile	E	Low

Material	Storage Location	Quantity	Potential Pollutant	Covered (C) or Enclosed (E)	Likelihood of Contact with Water
			organic compounds		
Reclamation	Stockpile Area	60 yards	Sediments	*	High
Sand (deicing)	Salt and Sand Shed	400 yards	Sediments	C	Low
Sand (stockpile)	Stockpile Area	1 ton	Sediments	*	High
Solvents	Vehicle Maintenance Garage	3 gallons	Volatile organic compounds	E	Low
Spill response material (Speedi Dri or similar)	Vehicle Maintenance Garage	33 pounds	Particulate matter, solids, residual oil	E	Low

* Materials stored without cover, but with proper applicable containment.

2.13 APPLICABILITY OF SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) REQUIREMENTS

Under federal regulations 40 CFR Part 112 (and Amendments), a Spill Prevention, Control, and Countermeasure (SPCC) Plan is required when a facility has an aboveground oil storage capacity greater than 1,320 gallons, when including containers with a capacity of 55 gallons or more. The Highway Department Facility does not have aboveground oil storage capacity that exceeds 1,320 gallons.

2.14 DESCRIPTION OF SIGNIFICANT MATERIAL STORAGE AREAS

Many activities at the Highway Department Facility which involve the materials included in Table 5 occur within contained garages or bays. These activities may include minor equipment/vehicle repair, oil changes, repainting, lubrication, and parts replacement.

Fueling of all Town of Milford vehicles occurs at the Fuel Island located east of the Vehicle Maintenance Garage. All bulk delivery of fuel to the Fuel Island is monitored by a Town of Milford employee.

The Highway Department Facility emergency generator is fueled with diesel. The diesel is delivered to the storage tank which is located southwest of the Vehicle Maintenance Garage. All bulk delivery of fuel to the emergency generator is monitored by a Town of Milford employee.

Waste oil and other used motor fluids are stored in the Vehicle Maintenance Garage and have internal containment or are located on appropriate containment pallets

Within the Salt Shed and Salt and Sand Shed, deicing materials including road salt are stored. Deicing liquid is stored in two tanks north of the Salt Shed. Delivery of deicing materials to the storage locations is monitored by a Highway Department employee.

2.15 LIST OF SIGNIFICANT LEAKS OR SPILLS

There have been no significant leaks or spills that have occurred at the Highway Department Facility in the last three years. If significant leaks or spills occur in the future, they should be recorded in Table 6, below.

Table 6: Significant Leaks or Spills
Highway Department Facility

Building or Area	Location	Type of Monitoring

Forms included in Appendix B will be used to document any spill or leak that occurs at the facility in the future.

2.16 STRUCTURAL BMPS

Structural BMPs include onsite constructed systems that provide pretreatment or treatment of stormwater flows. The following structural BMPs are presently used at the Highway Department Facility to maintain water quality.

2.16.1 Pretreatment Structural BMPs

- Deep Sump Catch Basins
- Oil/Grit Separators

2.16.2 Other Structural BMPs

- Infiltration Basin

2.17 SEDIMENT AND EROSION CONTROL

Site topography at the Highway Department Facility prevents drainage of stormwater and any associated sedimentation from entering the Town of Milford storm drain system or discharging directly to a water body.

SECTION 3 NON-STRUCTURAL CONTROLS

3.1 GOOD HOUSEKEEPING

Good housekeeping practices are activities, often conducted daily, that help maintain a clean facility and prevent stormwater pollution problems. The following is a list of good housekeeping measures that are practiced at the facility:

- All washing of vehicles is performed within the designated vehicle wash bay.
- All fluid products and wastes are kept indoors.
- All floor drains present within garage bays drain to an oil/water separator.
- Spill materials and cleanup kits are maintained at all locations where oil materials are used, stored, or may be present, including at Fuel Islands.
- Used spill cleanup materials are disposed of properly.
- Materials are stored indoors or in covered areas to minimize exposure to stormwater.
- No fertilizers, herbicides, or pesticides are stored or used at the facility.
- Lead-acid batteries are stored indoors and within secondary containment.
- Hazardous materials storage lockers with spill containment are used. Storage areas are located away from vehicle and equipment paths to reduce the potential of accident related leaks and spills.
- Storage drums and containers are not located close to storm drain inlets.
- All hazardous material storage areas and containers have proper signage, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment.
- All materials, waste oil storage containers, and gas cans are properly labeled.
- Oil/water separators and catch basins are maintained regularly and properly.
- Speedi Dri (or similar absorbent) is readily available and used for appropriate spills.
- Spill kits are located in areas where fluids are stored or where activities may result in a spill.
- Tools and materials are returned to designated storage areas after use.
- Waste materials are properly collected and disposed of.
- Different types of wastes are separated as appropriate.
- Regular waste disposal is arranged.
- Work areas are clean and organized.
- Work areas are regularly swept or vacuumed to collect metal, wood, and other particulates and materials.
- Obtain only the amount of materials required to complete a job.
- Materials are recycled when possible.
- Staff is familiar with manufacturer directions for proper use of materials and associated Safety Data Sheets (SDSs).
- Staff is familiar with proper use of equipment.
- Bollards, berms, and containment features are in place around areas and structures where fluids are stored.
- Drip pans are used for maintenance operations involving fluids and under leaking vehicles and equipment waiting repair.

The facility maintains a supply of spill cleanup materials at many buildings on site, and will maintain this inventory. An inventory of spill containment, control, and cleanup materials and spill kits maintained at the Highway Department Facility is shown in Table 3.

3.2 PREVENTATIVE MAINTENANCE

Preventative maintenance can minimize the occurrence of stormwater pollution by addressing issues before they become problems. Vehicles and equipment should be regularly inspected to prevent leaks of fuel, oil, and other liquids. Structural stormwater controls should be regularly maintained to prevent inadequate performance during storm events.

The following is a list of preventative maintenance procedures practiced at the facility

- All staff members are aware of spill prevention and response procedures.
- All staff members have received formal spill prevention and response procedure training.
- All equipment fueling procedures are completed by qualified personnel trained in spill response procedures.
- Hydraulic equipment is kept in good repair to prevent leaks.
- Vehicle storage areas are inspected frequently for evidence of leaking oil.
- Material storage tanks and containers are regularly inspected for leaks.
- All material and bulk deliveries are monitored by facility employees.
- All waste oil is fully contained and the containers are inspected regularly.

3.3 BEST MANAGEMENT PRACTICES

In a SWPPP, existing and planned BMPs are identified that will prevent or reduce the discharge of pollutants in stormwater runoff for each area of concern listed in SECTION 2.

To prevent or reduce the potential of stormwater contamination from petroleum products, the following BMPs shall continue to be followed:

1. Follow Standard Operating Procedure(s) during delivery of waste oil to the equipment/waste oil storage bay. These SOPs are included in Appendix A.
2. Follow Standard Operating Procedure(s) during delivery of bulk oil to the emergency generator and bulk fuel to the Fuel Island. These SOPs are included in Appendix A.
3. Minimize the volume of gasoline stored within the buildings and on the site.
4. Clean up any oil spills observed in the parking lot, garages, or other surfaces in a timely manner.
5. Monitor all material deliveries.
6. Inspect all storage tanks prior to filling activities for spills, leaks and corrosion.

3.4 SPILL PREVENTION AND RESPONSE

The following procedures apply to the facility:

- All personnel are instructed in location, use, and disposal of spill response equipment and supplies maintained at the site such as oil absorbent materials.

- The Pollution Prevention Team leader will be advised immediately of all spills of hazardous materials or regulated materials, regardless of quantity.
- Spills will be evaluated to determine the necessary response. If there is a health hazard, fire or explosion potential, 911 will be called. If a spill exceeds five gallons or threatens surface waters, including the storm drain system, state or federal emergency response agencies will be called.
- Spills will be contained as close to the source as possible with oil-absorbent materials. Additional materials or oil-absorbent socks will be utilized to protect adjacent catch basins.

SECTION 4 PLAN IMPLEMENTATION

4.1 EMPLOYEE TRAINING

Regular employee training is required for employees who work in areas where materials or activities are exposed to stormwater, or who are responsible for implementing activities identified in the SWPPP, including all members of the Pollution Prevention Team.

The Highway Surveyor is responsible for stormwater management training for Highway Department employees. This position coordinates training related to stormwater management on at least an annual basis to review specific responsibilities for implementing this SWPPP, what and how to accomplish those responsibilities, including BMP implementation.

Additionally, general awareness training is provided regularly (preferably annually) to all employees whose actives may impact stormwater discharges. The purpose of this training is to educate workers on activities that can impact stormwater discharges and to help implement BMPs.

All employees responsible for the fueling or lubrication of vehicles or equipment stored at the facility will be trained regularly (preferably annually). The topics below will be covered at employee training sessions:

1. Spill prevention and response
2. Good housekeeping
3. Materials management practices

Pollution Prevention Team members will meet at least twice a year to discuss the effectiveness of and improvement to the SWPPP. Appendix C contains copies of training documentation from these training activities including attendance sheets, instructor name and affiliation, date, time, and location of the training.

4.2 SITE INSPECTION REQUIREMENTS

It is required that the entire Highway Department Facility be inspected at least once each calendar quarter when the facility is in operation (at least one inspection must be conducted during a period when stormwater discharge is occurring). Scott Crisafulli is responsible for completing this inspection or delegating the inspection to another qualified individual.

The inspection must check for evidence of pollution, evaluate non-structural controls in place at the site, and inspect equipment. The site inspection report must include:

- The inspection date and time
- The name of the inspector
- Weather information and a description of any discharge occurring at the time of the inspection
- Identification of any previously unidentified discharges from the site
- Any control measures needing maintenance or repair
- Any failed control measures that need replacement

- Any SWPPP changes required as a result of the inspection
- Signed certification statement

The inspection form for these inspections, and copies of completed inspection forms, are included in Appendix D.

Corrective actions may be required based on evidence of past stormwater pollution or the high potential for future stormwater pollution to occur. Information about any issues and the respective corrective actions must be included in a Compliance Evaluation report. The permittee must repair or replace control measures in need of repair or replacement before the next anticipated storm event if possible, or as soon as practicable. In the interim, the permittee shall have back-up measures in place. The Compliance Evaluation report must be kept with the SWPPP and must state the problem, the solution, and when the solution was implemented.

4.3 RECORDKEEPING AND REPORTING

The permittee must keep a written record (hardcopy or electronic) of all activities required by the SWPPP including but not limited to maintenance, inspections, and training for a period of at least five years.

This SWPPP shall be kept at the Highway Department Facility and shall be updated if any of the conditions in SECTION 2.21 occur. The SWPPP and records shall be made available to state or federal inspectors and the general public upon request.

The 2016 Massachusetts MS4 Permit requires that each permittee report on the findings from Site Inspections in the annual report to USEPA and MassDEP.

Inspections of the Highway Department Facility should be performed at least quarterly (at least one during stormwater discharge) and described in the Annual Report, including any corrective actions taken, to demonstrate that operation of the Highway Department Facility is in compliance with the 2016 Massachusetts MS4 Permit.

4.4 TRIGGERS FOR SWPPP REVISIONS

Town of Milford shall review this SWPPP regularly to determine if any update or revision is required. Changes that may trigger revision include:

- An increase in the quantity of any potential pollutant stored at the facility.
- The addition of any new potential pollutant (not already addressed in this SWPPP) to the list of materials stored or used at the facility.
- Physical changes to the facility that expose any potential pollutant (not presently exposed) to stormwater.
- Presence of a new authorized non-stormwater discharge at the facility.
- Addition of an activity that introduces a new potential pollutant.

Changes in activity may include an expansion of operations or changes in any significant material handling or storage practices which could impact stormwater.

The amended SWPPP will describe the new activities that could contribute to increased pollution, as well as control measures that have been implemented to minimize the potential for pollution.

This SWPPP will be amended if a state or federal inspector determines that it is not effective in controlling stormwater pollutants discharged to waterways.

SECTION 5 SWPPP 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.

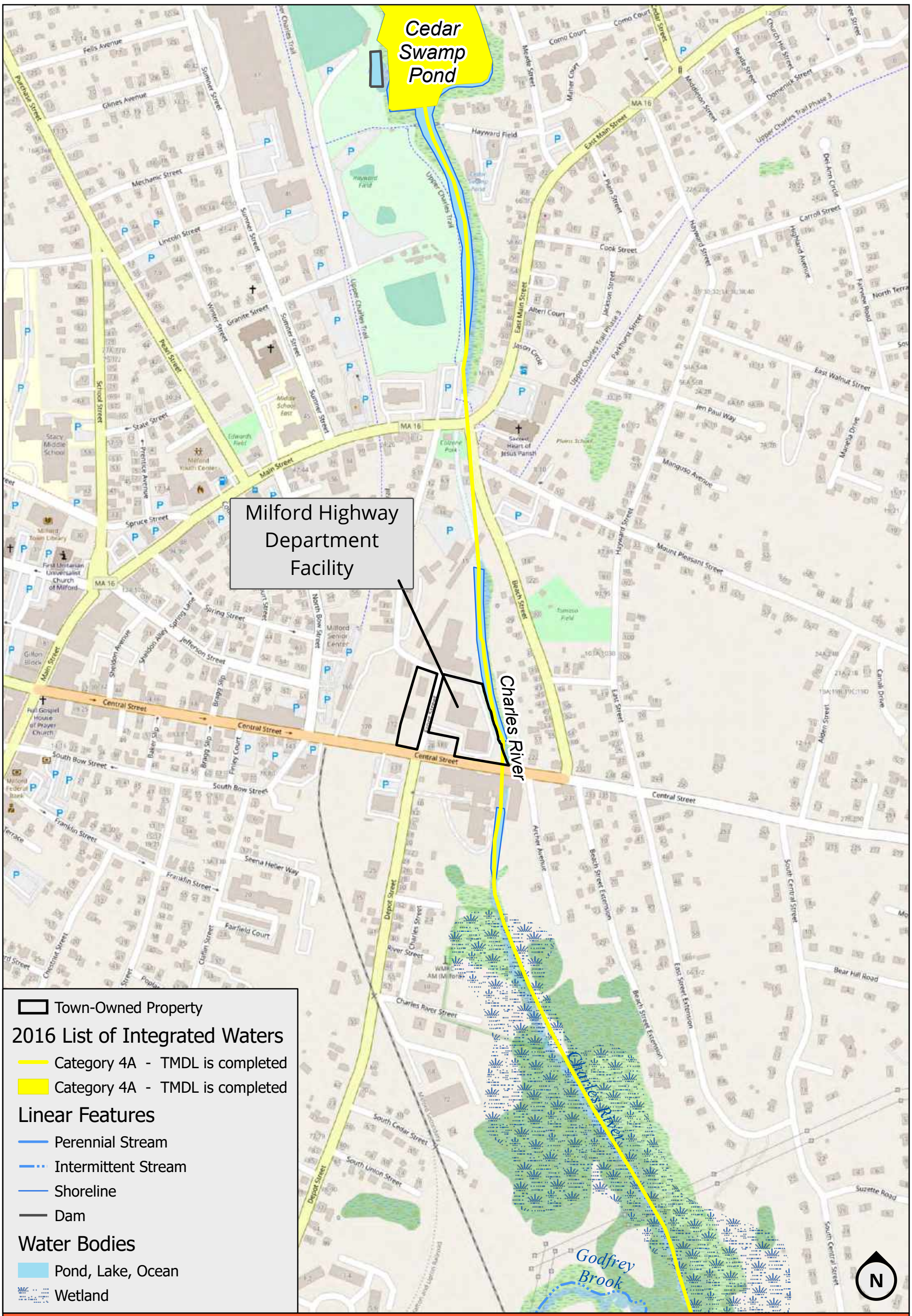
Authorized Official

Title Highway Surveyor

1-6-21

Date

FIGURES

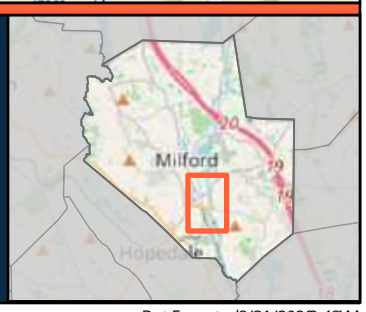


ENVIRONMENTAL PARTNERS

Figure 1 Locus Map

Milford, Massachusetts

0 350 700 Feet



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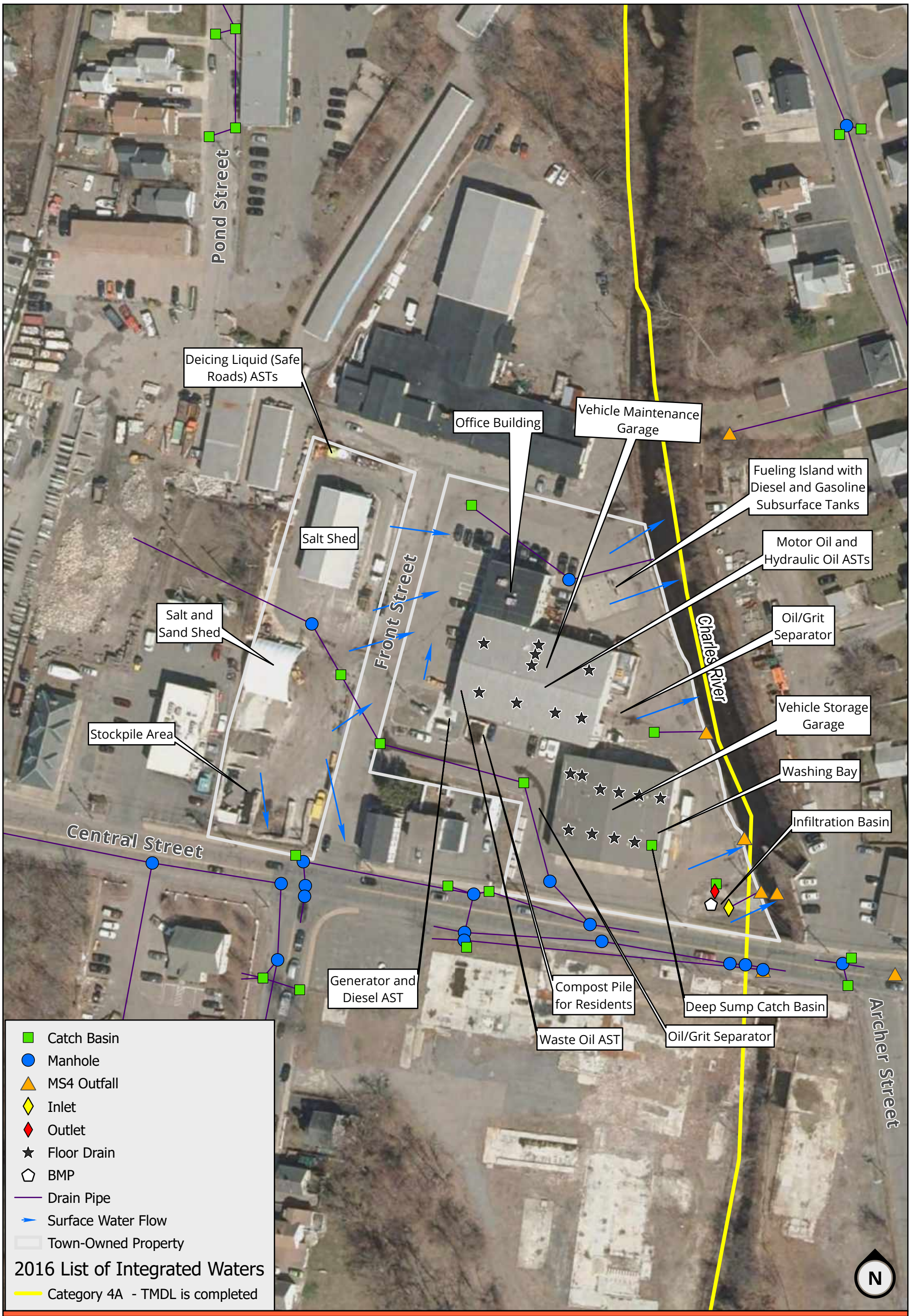
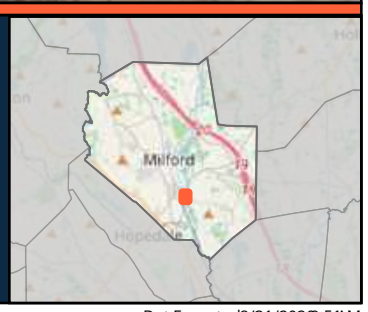


ENVIRONMENTAL PARTNERS

Figure 2 Site Map

Milford, Massachusetts

0 100 200 Feet



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APPENDIX A

Standard Operating Procedures

ENVIRONMENTAL PARTNERS

STANDARD OPERATING PROCEDURE 3: CATCH BASIN INSPECTION AND CLEANING

Introduction

Catch basins help minimize flooding and protect water quality by removing trash, sediment, decaying debris, and other solids from stormwater runoff. These materials are retained in a sump below the invert of the outlet pipe. Catch basin cleaning reduces foul odors, prevents clogs in the storm drain system, and reduces the loading of suspended solids, nutrients, and bacteria to receiving waters.

During regular cleaning and inspection procedures, data can be gathered related to the condition of the physical basin structure and its frame and grate and the quality of stormwater conveyed by the structure. Observations such as the following can indicate sources of pollution within the storm drain system:

- Oil sheen
- Discoloration
- Trash and debris

Both bacteria and petroleum can create a sheen on the water surface. The source of the sheen can be differentiated by disturbing it, such as with a pole. A sheen caused by a oil will remain intact and move in a swirl pattern; a sheen caused by bacteria will separate and appear "blocky". Bacterial sheen is not a pollutant but should be noted.

Observations such as the following can indicate a potential connection of a sanitary sewer to the storm drain system, which is an illicit discharge.

- Indications of sanitary sewage, including fecal matter or sewage odors
- Foaming, such as from detergent
- Optical enhancers, fluorescent dye added to laundry detergent

Each catch basin should be cleaned and inspected at least annually. Catch basins in high-use areas may require more frequent cleaning. Performing street sweeping on an appropriate schedule will reduce the amount of sediment, debris, and organic matter entering the catch basins, which will in turn reduce the frequency with which structures need to be cleaned.

Cleaning Procedure

Catch basin inspection cleaning procedures should address both the grate opening and the basin's sump. Document any and all observations about the condition of the catch basin structure and water quality on the Catch Basin Inspection Form (attached).

Catch basin inspection and cleaning procedures include the following:

1. Work upstream to downstream.
2. Clean sediment and trash off grate.
3. Visually inspect the outside of the grate.
4. Visually inspect the inside of the catch basin to determine cleaning needs.
5. Inspect catch basin for structural integrity.
6. Determine the most appropriate equipment and method for cleaning each catch basin.
    a. Manually use a shovel to remove accumulated sediments, or
    b. Use a bucket loader to remove accumulated sediments, or
    c. Use a high pressure washer to clean any remaining material out of catch basin while capturing the slurry with a vacuum.
    d. If necessary, after the catch basin is clean, use the rodder of the vacuum truck to clean downstream pipe and pull back sediment that might have entered downstream pipe.
7. If contamination is suspected, chemical analysis will be required to determine if the materials comply with the Massachusetts DEP Hazardous Waste Regulations, 310 CMR 30.000 (https://www.mass.gov/files/documents/2016/08/xl/310cmr30_7883_54357.pdf). Chemical analysis required will depend on suspected contaminants. Note the identification number of the catch basin on the sample label, and note sample collection on the Catch Basin Inspection Form.
8. Properly dispose of collected sediments. See following section for guidance.
9. If fluids collected during catch basin cleaning are not being handled and disposed of by a third party, dispose of these fluids to a sanitary sewer system, with permission of the system operator.
10. If illicit discharges are observed or suspected, notify the appropriate Department.
11. At the end of each day, document location and number of catch basins cleaned, amount of waste collected, and disposal method for all screenings.
12. Report additional maintenance or repair needs to the appropriate Department.

Disposal of Screenings

Catch basin cleanings from storm water-only drainage systems may be disposed at any landfill that is permitted by MassDEP to accept solid waste. MassDEP does not routinely require stormwater-only catch basin cleanings to be tested before disposal, unless there is evidence that they have been contaminated by a spill or some other means.

Screenings may need to be placed in a drying bed to allow water to evaporate before proper disposal. In this case, ensure that the screenings are managed to prevent pollution.

Attachments

1. Catch Basin Inspection Form

Job No.: _____ **Town:** Milford

Inspector: _____ **Date:** _____

ENVIRONMENTAL PARTNERS

CATCH BASIN INSPECTION FORM

Catch Basin I.D.	_____	**Final Discharge from Structure?** Yes ☐ No ☐ **If Yes, Discharge to Outfall No:**_____	
Catch Basin Label:	**Stencil** ☐ **Ground Inset** ☐ **Sign** ☐ **None** ☐ **Other**_____		
Basin Material:	Concrete ☐ Corrugated metal ☐ Stone ☐ Brick ☐ Other: _____ ☐	**Catch Basin Condition:**	Good ☐ Poor ☐ Fair ☐ Crumbling ☐
Pipe Material:	Concrete ☐ HDPE ☐ PVC ☐ Clay Tile ☐ Other:_____	**Pipe Measurements:**	Inlet Dia. (in): d= ____ Outlet Dia. (in): D= ____

Required Maintenance/ Problems (check all that apply):

- ☐ Tree Work Required
- ☐ New Grate is Required
- ☐ Pipe is Blocked
- ☐ Frame Maintenance is Required
- ☐ Remove Accumulated Sediment
- ☐ Pipe Maintenance is Required
- ☐ Basin Undermined or Bypassed
- ☐ Cannot Remove Cover
- ☐ Ditch Work
- ☐ Corrosion at Structure
- ☐ Erosion Around Structure
- ☐ Remove Trash & Debris
- ☐ Need Cement Around Grate

Other: _____

Catch Basin Grate Type :	**Sediment Buildup Depth :**	**Description of Flow:**	**Street Name/ Structure Location:**
Bar: ☐ Cascade: ☐ Other:_____ Properly Aligned: Yes ☐ No ☐	0-6 (in): _____ 6-12(in): _____ 12-18 (in): _____ 18-24 (in): _____ 24 + (in): _____	Heavy ☐ Moderate ☐ Slight ☐ Trickling ☐	

***If the outlet is submerged check yes and indicate approximate height of water above the outlet invert.** h above invert (in):___ Yes ☐ No ☐

☐ **Flow** ☐ **Standing Water** **(check one or both)**	**Observations:**		**Circle those present:**
	Color:		Foam / Oil Sheen
	Odor:		Sanitary Waste / Bacterial Sheen
Weather Conditions :	Dry > 24 hours ☐	Wet ☐	Orange Staining / Floatables
Sample of Screenings Collected for Analysis? Yes ☐ No ☐			Excessive sediment / Pet Waste
Comments:			Other:_____ / Optical Enhancers

STANDARD OPERATING PROCEDURE 4:

SPILL RESPONSE AND CLEANUP PROCEDURES

Introduction

Municipalities are responsible for any contaminant spill or release that occurs on property they own or operate. Particular areas of concern include any facilities that use or store chemicals, fuel oil or hazardous waste, including schools, garages, Highway Department yards, and landfills. Implementation of proper spill response and cleanup procedures can help to mitigate the effects of a contaminant release.

Responding to a Spill

In the event of a spill, follow these spill response and cleanup procedures:

1. Notify a member of the facility's Pollution Prevention Team, the facility supervisor, and/or the facility safety officer.
2. Assess the contaminant release site for potential safety issues and for direction of flow.
3. With proper training and personal protective equipment, complete the following:
    a. Stop the contaminant release;
    b. Contain the contaminant release through the use of spill containment berms or absorbents;
    c. Protect all drains and/or catch basins with the use of absorbents, booms, berms or drain covers;
    d. Clean up the spill;
    e. Dispose of all contaminated products in accordance with applicable federal, state and local regulations.
        i. Products contaminated with petroleum shall be handled and disposed of as described in MassDEP policy WCS-94-400, Interim Remediation Waste Management Policy for Petroleum Contaminated Soils, http://www.mass.gov/dep/cleanup/laws/94-400.pdf.
        ii. Products saturated with petroleum products or other hazardous chemicals require special handling and disposal by licensed transporters. Licensed transporters will pick up spill contaminated materials for recycling or disposal. Save the shipping records for at least three years.
        iii. Waste oil contaminated products:
            1. Perform the "one drop" test to ensure absorbents do not contain enough oil to be considered hazardous. Wring absorbents through a paint filter. If doing so does not generate one drop of oil, the materials are not hazardous.
            2. If absorbents pass the "one drop" test they may be discarded in the trash, unless contaminated with another hazardous waste.
                a. It is acceptable to mix the following fluids and handle them as waste oil:
                i. Waste Motor Oil;

ii. Hydraulic Fluid;
iii. Power Steering Fluid;
iv. Transmission Fluid;
v. Brake Fluid;
vi. Gear Oil.

a. Do not mix the following materials with waste oil, store each separately:
    i. Gasoline;
    ii. Antifreeze;
    iii. Brake and Carburetor Cleaners;
    iv. Cleaning Solvents;
    v. Other Hazardous Wastes.

3. If absorbents do not pass the “one drop” test they should be placed in separate metal containers with tight fittings lids, labeled “Oily Waste Absorbents Only”.
4. If you need assistance containing and/or cleaning up the spill, or preventing it from discharging to a surface water (or an engineered storm drain system), contact your local fire department using the number listed below, however in the case of an emergency call 911;
    a. Milford (508) 743-2256
    b. Hopedale (508) 493-1050;
    c. Holliston (508) 429-4631;
    d. Medway (508) 533-3211;
    e. Mendon (508) 493-5330;
    f. Upton (508) 529-3421;
    g. Bellingham (508) 966-1112;
    h. Franklin (508) 528-2323;
    i. Northbridge (508) 234-8448;
    j. Uxbridge (508) 278-7725.
5. Contact the MassDEP 24-hour spill reporting notification line, toll-free at (888)-3104-1133;
    n. The following scenarios are exempt from MassDEP reporting requirements:
        i. Spills of less than 10 gallons of petroleum and do not impact a water body;
        ii. Spills of less than one pound of hazardous chemicals and do not present an imminent health or safety hazard;
        iii. Spills from passenger vehicle accidents;
        iv. Spills within a vault or building with a watertight floor and walls that completely contain all released chemicals.

Procedures for Reporting Spill Response

When contacting emergency response personnel or a regulatory agency, or when reporting the contaminant release, be prepared to provide the following information:

1. Your name and the phone number you are calling from.
2. The exact address and location of the contaminant release.
3. Specifics of release, including:
    a. What was released;
    b. How much was released, which may include:
        i. Pounds;
        ii. Gallons;
        iii. Number of containers.
4. Where was the release sent/what was contaminated, addressing:
    a. Pavement;
    b. Soil;
    c. Drains;
    d. Catch Basins;
    e. Water Bodies;
    f. Public Street;
    g. Public Sidewalk.
5. The concentration of the released contaminant.
6. What/who caused the released contaminant.
7. Is the release being contained and/or cleaned up, or is the response complete.
8. Type and amount of petroleum stored on site, if any.
9. Characteristics of contaminant container, including
    a. Tanks;
    b. Pipes;
    c. Valves.

Maintenance and Prevention Guide

Prevention of spills is preferable to even the best response and cleanup. To mitigate the effects of a contaminant release, provide proper maintenance and inspection at each facility.

To protect against contaminant release adhere to the following guidance:

1. Ensure all employees are properly trained to respond in the case of a spill, understand the nature and properties of the contaminant and understand the spill control materials and personnel safety equipment. Maintain training records of current personnel on site and retain training records of former personnel for at least three years from the date last worked at the facility;
2. Provide yearly maintenance and inspection at all municipal facilities, paying particular attention to underground storage tanks. Maintain maintenance and inspection records on site;
3. Implement good management practices where chemicals and hazardous wastes are stored;
    d. Ensure storage in closed containers inside a building and on an impervious surface;

   e. If storage cannot be provided inside, ensure secondary containment for 110 percent of the maximum volume of the storage container;
   f. Locate storage areas near maintenance areas to decrease the distance required for transfer;
   g. Provide accurate labels, MSDS information and warnings for all stored materials;
   a. Regularly inspect storage areas for leaks;
   b. Ensure secure storage locations, preventing access by untrained or unauthorized persons;
   c. Maintain accurate records of stored materials.
4. Replace traditional hazardous materials such as pesticides and cleansers with non-hazardous products such as bio-lubricants which can reduce response costs in the case of a spill;
5. Maintain a oil and grease spill response kit with the following materials, at a minimum, at each facility:
   a. 6.5 gallon bucket with screw top lid and handle
   b. 10 gallons of sand
   c. 200 pounds of Speedi Dry absorbent
   d. Drain covers
   e. Spill containment berms
   f. (4) 3’ absorbent socks
   g. (16) 16” x 18” absorbent pads
   h. Goggles
   i. Nitrile gloves
   j. Disposable bags to dispose of used materials
   k. Laminated contacts list shall include the following names and numbers:
      i. Safety Officer;
      ii. Facility Supervisor;
      iii. Local Fire Department;
      iv. MassDEP spill report notification line;
      v. MassDEP Regional Office;
      vi. Hazardous Waste Compliance Assistance Line;
      vii. Household Hazardous Products Hotline;
      viii. Massachusetts Department of Fire Services;
      ix. Licensed Site Professionals Information.

Attachments

1. Spill Response and Cleanup Contact List

SPILL RESPONSE AND CLEANUP CONTACT LIST

	Phone Number	Date and Time contacted
Safety Officer	(508) 473-1274	
Facility Supervisor: Scott Crisafulli	(508) 473-1274	
Milford Fire Department	(508) 473-2256	
MassDEP 24-Hour Spill Reporting	(888)-304-1133	
MassDEP Regional Offices:		
Northeast Regional Office	(978) 694-3200	
Southeast Regional Office	(508) 946-2700	
Central Regional Office	(508) 792-7650	
Western Regional Office	(413) 784-1100	
Hazardous Waste Compliance Assistance Line	(617) 292-5898	
Household Hazardous Products Hotline	(800) 343-3420	
Massachusetts Department of Fire Services	(978) 567-3100 or (413) 587-3181	
Licensed Site Professionals Association	(781) 876-8915	
Licensed Site Professionals Board	(617) 556-1091	

STANDARD OPERATING PROCEDURE 6: EROSION AND SEDIMENTATION CONTROL

Introduction

Erosion and sedimentation from land-disturbing human activities can be a significant source of stormwater pollution. This Standard Operating Procedure describes methods for reducing or eliminating pollutant loading from such activities.

Controlling Erosion and Sediment through Design and Planning

Prevention of erosion and sedimentation is preferable to installing treatment devices. Consistent application and implementation of the following guidelines during the design and review phases can prevent erosion and sedimentation:

1. Avoid sensitive areas, steep slopes, and highly erodible soils to the maximum extent possible when developing site plans.
2. Identify potential problem areas before the site plan is finalized and approved.
3. Plan to use sediment barriers along contour lines, with a focus on areas where short-circuiting (i.e., flow around the barrier) may occur.
4. Use berms at the top of a steep slopes to divert runoff away from the slope's edge.
5. Design trapezoidal or parabolic vegetated drainage channels, not triangular.
6. Use vegetated channels with rip rap check dams, instead of impervious pavement or concrete, to reduce the water velocity of the conveyance system.
7. Design a check dam or sediment forebay with level spreader at the exit of outfalls to reduce water velocity of the discharge and collect sediment.
8. Use turf reinforcement matting to stabilize vegetated channels, encourage vegetation establishment, and withstand flow velocities without scouring the base of the channel.
9. Plan open channels to follow land contours so natural drainage is not disrupted.
10. Use organic matting for temporary slope stabilization and synthetic matting for permanent stabilization.
11. Provide a stable channel, flume, or slope drain where it is necessary to carry water down slopes.

Controlling Erosion and Sediment on Construction Sites

During the construction phase, it is important to inspect active sites regularly to ensure that practices are consistent with approved site plans and the site's Stormwater Pollution Prevention Plan (SWPPP) or other document, as required by the municipality's legal authority. The following guidelines apply:

1. Erosion and sediment control features should be constructed before initiating activities that remove vegetated cover or otherwise disturb the site. These shall be installed consistent with the approved site plans and with manufacturer's instructions.
2. Erosion and sediment control devices shall be inspected by the contractor regularly, and maintained as needed to ensure function.
3. In the SWPPP or other document, the contractor shall clearly identify the party responsible for maintaining erosion and sediment control devices.
4. An inspection should be completed of active construction sites every month, at a minimum, to check the status of erosion and sedimentation controls.
5. Existing vegetation should be maintained on site as long as possible.
6. Construction should proceed progressively on the site in order to minimize exposed soil, and disturbed areas should be restored as soon as possible after work has been completed.
7. Stockpiles shall be stabilized by seeding or mulching if they are to remain for more than two weeks.
8. Disturbed areas shall be protected from stormwater runoff by using protective Best Management Practices (BMPs).
9. Clean water shall be diverted away from disturbed areas on construction sites to prevent erosion and sedimentation.
10. Sediment traps and sediment barriers should be cleaned out regularly to reduce clogging and maintain design function.
11. Vegetated and wooded buffers shall be protected.
12. Soils shall be stabilized by mulching and/or seeding when they would be exposed for more than one week during the dry season, or more than two days during the rainy season.
13. Vegetation shall be allowed to establish before introducing flows to channels.
14. Regular light watering shall be used for dust control, as this is more effective than infrequent heavy watering.
15. Excessive soil compaction with heavy machinery shall be avoided, to the extent possible.
16. Construction activities during months with higher runoff rates shall be limited, to the extent possible.

Controlling Erosion and Sediment by Proper Maintenance of Permanent BMPs

Many construction phase BMPs can be integrated into the final site design, but ongoing inspection and maintenance are required to ensure long-term function of any permanent BMP. The following guidelines summarize the requirements for long-term maintenance of permanent BMPs.

1. Responsibility for maintaining erosion and sediment control devices shall be clearly identified.
2. Erosion and sediment control devices shall be inspected following heavy rainfall events to ensure they are working properly.
3. Erosion control blankets shall be utilized when seeding slopes.
4. Vegetated and wooded buffers shall be protected, and left undisturbed to the extent possible.
5. Runoff shall not be diverted into a sensitive area unless this has been specifically approved.

6. Sedimentation basins shall be cleaned out once sediment reaches 50% of the basin's design capacity.
7. Snow shall not be plowed into, or stored within, retention basins, rain gardens, or other BMPs.
8. Easements and service routes shall be maintained, to enable maintenance equipment to access BMPs for regular cleaning.

STANDARD OPERATING PROCEDURE 7: FUEL AND OIL HANDLING PROCEDURES

Introduction

Spills, leaks, and overfilling can occur during handling of fuels and petroleum-based materials, even in small volumes, representing a potential source of stormwater pollution. This Standard Operating Procedure addresses a variety of ways by which fuels and petroleum-based materials can be delivered, as well as steps to be taken when petroleum products (such as waste oil) are loaded onto vehicles for offsite disposal or recycling. Delivery, unloading, and loading of waste oils are hereafter referred to as "handling".

For all manners of fuel and oil handling described below, a member of the facility's Pollution Prevention Team (or another knowledgeable person familiar with the facility) shall be present during handling procedures. This person shall ensure that the following are observed:

1. There is no smoking while fuel handling is in process or underway.
2. Sources of flame are kept away while fuel handling is being completed. This includes smoking, lighting matches, carrying any flame, or carrying a lighted cigar, pipe, or cigarette.
3. The delivery vehicle's hand brake is set and wheels are chocked while the activity is being completed.
4. Catch basins and drain manholes are adequately protected.
5. No tools are to be used that could damage fuel or oil containers or the delivery vehicle.
6. No flammable liquid shall be unloaded from any motor vehicle while the engine is operating, unless the engine of the motor vehicle is required to be used for the operation of a pump.
7. Local traffic does not interfere with fuel transfer operations.
8. The attending persons should watch for any leaks or spills
    a. Any small leaks or spills should be immediately stopped, and spilled materials absorbed and disposed of properly. Refer to SOP 4, "Spill Response and Cleanup Procedures", for examples of spill cleanup and response materials.
    b. In the event of a large spill or one that discharges to surface waters or an engineered storm drain system, the facility representative shall activate the facility's Stormwater Pollution Prevention Plan (SWPPP) and report the incident as specified within.

Delivery by Bulk (Tanker) Truck

Procedures for the delivery of bulk fuel shall include the following:

1. The truck driver shall check in with the facility upon arrival.
2. The facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible.

Refer to SOP 4, “Spill Response and Cleanup Procedures”, for examples of spill cleanup and response materials.

3. The facility representative shall check to ensure that the amount of delivery does not exceed the available capacity of the tank.
    a. A level gauge can be used to verify the level in the tank.
    b. If a level gauge is not functioning or is not present on the tank, the tank should be stick tested prior to filling.
4. The truck driver and the facility representative shall both remain with the vehicle during the delivery process.
5. The truck driver and the facility representative shall inspect all visible lines, connections, and valves for leaks.
6. When delivery is complete and the hoses are removed, buckets should be placed underneath connection points to catch drippings.
7. The delivery vehicle shall be inspected prior to departure to ensure that the hose is disconnected from the tank.
8. The facility representative shall inspect the fuel tank to verify that no leaks have occurred, or that any leaked or spilled material has been cleaned and disposed of properly.
9. The facility representative shall gauge tank levels to ensure that the proper amount of fuel is delivered, and collect a receipt from the truck driver.

Delivery of Drummed Materials

Drummed materials may include motor oil, hydraulic fluid, transmission fluid, or waste oil from another facility (as approved). Procedures for the delivery of drummed materials shall include the following:

1. The truck driver shall check in with the facility upon arrival.
2. The facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible. Refer to SOP 4, “Spill Response and Cleanup Procedures”, for examples of spill cleanup and response materials.
3. The facility representative shall closely examine the shipment for damaged drums.
    a. If damaged drums are found, they shall be closely inspected for leaks or punctures.
    b. Breached drums should be removed to a dry, well-ventilated area and the contents transferred to other suitable containers.
    c. Drums shall be disposed of in accordance with all applicable regulations.
4. Drummed materials shall not be unloaded outdoors during wet weather events.
5. The truck driver and the facility representative shall both remain with the vehicle during the delivery process.
6. Drums shall be handled and unloaded carefully to prevent damage.
7. Upon completion of unloading, the facility representative shall inspect the unloading point and the drums to verify that no leaks have occurred, that any leaked or spilled material has been cleaned up and disposed of properly, and that the unloaded drums are not leaking.
8. The facility representative shall check to ensure that the proper amount of fuel is delivered, and collect a receipt from the truck driver.

Delivery of Drummed Materials

When waste oil or similar oil products need to be removed from the premises, only haulers certified to transport waste oil should be utilized. Procedures for the draining of bulk oil tanks shall include the following:

1. The disposal truck driver shall check in with the facility upon arrival.
2. The facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible. Refer to SOP 4, “Spill Response and Cleanup Procedures”, for examples of spill cleanup and response materials.
3. The facility representative shall verify that the volume of waste oil in the tank does not exceed the available capacity of the disposal hauler’s vehicle.
4. The truck driver and the facility representative shall both remain with the vehicle during the tank draining process.
6. When draining is complete and the hoses are removed, buckets should be placed underneath connection points to catch drippings.
7. The disposal hauler vehicle shall be inspected prior to departure to ensure that the hose is disconnected from the tank.
8. The facility representative shall inspect the loading point and the tank to verify that no leaks have occurred, or that any leaked or spilled material has been cleaned up and disposed of properly.
9. The facility representative shall collect a receipt from the truck driver.

Related Standard Operating Procedures

1. SOP 4, Spill Response and Cleanup Procedures

STANDARD OPERATING PROCEDURE 11:

OIL/WATER SEPARATOR (OWS) MAINTENANCE

Introduction

Oil/water separators (OWS), also known as gas/oil separators, are structural devices intended to provide pretreatment of floor drain water from industrial and garage facilities. An OWS allows oils (and substances lighter than water) to be intercepted and be removed for disposal before entering the sanitary sewer system. Substances heavier than water settle into sludge at the bottom of the unit. The remaining water passes through the unit into the sanitary sewer system.

OWS units are generally required where petroleum-based products, wastes containing petroleum, or oily and/or flammable materials are used, produced, or stored. OWS units should not be used to manage stormwater or flow from vehicle washing facilities. High flow rates through an OWS will reduce the structure's ability to separate materials. Detergents and solvents can emulsify oil and grease, allowing the particles to enter the sewer, so these should not be disposed of in drains entering the OWS.

General OWS Maintenance Requirements

1. Each OWS at a facility may receive different materials in different quantities, so the cleanout schedule may not be the same for every OWS at a facility.
2. Employees performing inspections of an OWS must be properly trained and be familiar with the maintenance of that specific structure, since function can vary based on design. Third-party firms may be utilized to perform quarterly inspections.
3. Do not drain petroleum, oil, or lubricants directly to an OWS. The structures are designed to manage these materials at low and medium concentrations in sanitary sewage, not as slug loads.
4. Do not drain antifreeze, degreasers, detergents, fuels, alcohols, solvents, coolant, or paint to the OWS.
5. Separator compartment covers should be tightly sealed to ensure floor drainage only enters the first compartment of the OWS.
6. Drains should be kept free of debris and sediment to the maximum extent practicable.
7. Spill cleanup materials should be maintained in the area served by the OWS. For more information on spill cleanup and response materials, refer to SOP 4, "Spill Response and Cleanup Procedures".

OWS Inspection Procedures

Daily inspection of an OWS should include a visual examination of the area served by the OWS for evidence of spills or leaks.
Weekly inspections of an OWS should include the following:

1. Visually examine the area served by the OWS for evidence of spills or leaks.
2. Inspect the point of discharge (i.e., sewer manhole) for evidence of petroleum bypassing the OWS.
3. Inspect drains for any signs of unauthorized substances entering the OWS.
4. Examine the OWS for signs of leaks or any malfunction.

Quarterly inspections of an OWS should include the following:

1. Complete tasks noted as appropriate for daily and weekly inspection.
2. Complete the Quarterly OWS Inspection Checklist, attached, during the inspection.
3. Take the following measurements to benchmark function of the OWS:
    a. Distance from rim of access cover to bottom of structure
    b. Distance from rim of access cover to top of sludge layer
    c. Depth of sludge layer (c = a – b)
    d. Distance from rim of access cover to the oil/water interface
    e. Distance from rim of access cover to the top of the liquid surface
    f. Depth of oil layer (f = d – e)

OWS Cleaning Procedures

Cleaning of the OWS is required when there has been a spill to the OWS that exceeds ten gallons of oil, one gallon of detergent or solvent, or any material prohibited by the owner of the sanitary sewer. Cleaning is also required when the levels of accumulated sludge and/or oil meet the manufacturer's recommended levels for cleaning. This will vary based on the manufacturer of the OWS. If the manufacturer's recommendations are unknown, the following guidelines are appropriate for determining when to clean:

1. When sludge accumulates to 25% of the wetted height of the separator compartment; or
2. When oil accumulates to 5% of the wetted height of the separator compartment; or
3. When 75% of the retention capacity of the OWS is filled.

Cleaning should be performed a minimum of once per year. When cleaning is required, it shall be performed by licensed OWS maintenance companies. Materials removed from the OWS must be disposed of in accordance with Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.

Documentation of Cleaning and Service

The operator of the premises where the OWS is located shall maintain a log describing the date and type of all inspections, service and maintenance performed in connection with the Separator. Documentation shall include the identity of the inspector (or the identity of the person or entity that performed the service and/or maintenance). Records shall also document the amount of residue removed from the OWS each time it was cleaned, and how removed materials were disposed. This documentation shall be maintained for a minimum of six years.

Attachments

1. OWS Quarterly Inspection Checklist

OIL/WATER SEPARATOR (OWS)
QUARTERLY INSPECTION CHECKLIST

Facility: _____

OWS Location: _____

Inspected By: _____

Date: _____

Visual Inspection	Are there any signs of spills or leaks in the general area?	**Yes** ☐ **No** ☐
	Is there any evidence of petroleum bypassing the OWS?	**Yes** ☐ **No** ☐
	Are there any unauthorized substances entering the OWS?	**Yes** ☐ **No** ☐
	Does the OWS exhibit any signs of leaks or malfunctions?	**Yes** ☐ **No** ☐

If you answered "Yes" to any of the above questions, further inspection, repair, and/or cleaning may be necessary.

Measurements	A	Distance from rim of access cover to bottom of structure	
	B	Distance from rim of access cover to top of sludge layer	
	C = A - B	Depth of sludge layer	
	D	Distance from rim of access cover to the oil/water interface	
	E	Distance from rim of access cover to the top of the liquid surface	
	F = D - E	Depth of oil layer	

If the values for "C" and/or "F" are greater than those in the manufacturer's recommendations, the OWS must be cleaned by a licensed OWS maintenance company.

APPENDIX B

Spill Documentation Forms

Significant Spills, Leaks or Other Releases

Instructions:

- Include the descriptions and dates of any incidences of significant spills, leaks, or other releases that resulted in discharges of pollutants to waters of the U.S., through stormwater or otherwise; the circumstances leading to the release and actions taken in response to the release; and measures taken to prevent the recurrence of such releases .
- Provide information, as shown below, for each incident, and attach additional documentation (e.g., photos, spill cleanup records) as necessary. Repeat as necessary by copying and pasting the fields below.

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

APPENDIX C

Training Documentation and Attendance Sheets

Training Documentation and Attendance Sheets

Instructions:

- Keep records of employee training, including the date of the training.
- For in-person training, consider using the tables below to document your employee trainings. For computer-based or other types of training, keep similar records on who was trained and the type of training conducted.

Training Date:	
Training Description (including duration and subjects covered):	
Trainer:	
Employee(s) trained	Employee signature

Training Date:	
Training Description (including duration and subjects covered):	
Trainer:	
Employee(s) trained	Employee signature

Training Date:	
Training Description (including duration and subjects covered):	
Trainer:	
Employee(s) trained	Employee signature

APPENDIX D

Facility Inspection Form

Site Inspection Reports

Instructions:

- Include in your records copies of all routine facility inspection reports completed for the facility.
- The sample inspection report is consistent with the requirements in the 2016 Massachusetts MS4 Permit relating to site inspections. If MassDEP provides you with an inspection report, use that form.

Using the Sample Site Inspection Report

- This inspection report is designed to be customized according to the specific control measures and activities at your facility. For ease of use, you should take a copy of your site plan and number all of the stormwater control measures and areas of industrial activity that will be inspected. A brief description of the control measures and areas that were inspected should then be listed in the site-specific section of the inspection report.
- You can complete the items in the "General Information" section that will remain constant, such as the facility name and inspector (if you only use one inspector). Print out multiple copies of this customized inspection report to use during your inspections.
- When conducting the inspection, walk the site by following your site map and numbered control measures/areas of industrial activity to be inspected. Also note whether the "Areas of Materials or Activities exposed to stormwater" have been addressed (customize this list according to the conditions at your facility). Note any required corrective actions and the date and responsible person for the correction.

Stormwater Site Inspection Report

General Information			
Facility Name			
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			

Weather Information
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds ❑ Other: Temperature:
Have any previously unidentified discharges of pollutants occurred since the last inspection? ❑Yes ❑No **If yes, describe:**
Are there any discharges occurring at the time of inspection? ❑Yes ❑No **If yes, describe:**

Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Structural Control Measure	**Control Measure is Operating Effectively?**	**If No, In Need of Maintenance, Repair, or Replacement?**	**Corrective Action Needed and Notes** (identify needed maintenance and repairs, or any failed control measures that need replacement)
1		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
2		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
3		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
4		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
5		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
6		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

	Structural Control Measure	**Control Measure is Operating Effectively?**	**If No, In Need of Maintenance, Repair, or Replacement?**	**Corrective Action Needed and Notes** (identify needed maintenance and repairs, or any failed control measures that need replacement)
7		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
8		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
9		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
10		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

Areas of Materials or Activities exposed to stormwater

Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of materials or activities at your facility.

	Area/Activity	**Inspected?**	**Controls Adequate (appropriate, effective, and operating)?**	**Corrective Action Needed and Notes**
1	**Material loading/unloading and storage areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
2	**Equipment operations and maintenance areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
3	**Fueling areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
4	**Outdoor vehicle and equipment washing areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
5	**Waste handling and disposal areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
6	**Erodible areas/construction**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
7	**Non-stormwater/ illicit connections**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
8	**Salt storage piles or pile containing salt**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
9	**Dust generation and vehicle tracking**	❑Yes ❑No ❑ N/A	❑Yes ❑No	

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
10	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
11	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
12	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Additional Control Measures

Describe any additional control measures or changes to the SWPPP needed to comply with the permit requirements:

Notes

Use this space for any additional notes or observations from the inspection:

Print inspector name and title:
_____

Signature:_____Date:_____

Quarterly Visual Assessment Reports – additional form when stormwater discharge is occurring

Instructions:

- Include in your records copies of all quarterly visual assessment reports completed for the facility. An example quarterly visual assessment report can be found on the following page.
- At least one quarterly inspection per year must occur while stormwater is discharging.

Quarterly Visual Assessment Form– additional form when stormwater discharge is occurring

(Complete a separate form for each outfall you assess)

Name of Facility:

Outfall Name: "Substantially Identical Outfall"? ☐ No ☐ Yes

Person(s)/Title(s) collecting sample:

Person(s)/Title(s) examining sample:

Date & Time Discharge Began (approx.): Date & Time Visual Sample Collected: Date & Time Visual Sample Examined:

Nature of Discharge: ☐ Rainfall ☐ Snowmelt

Parameter

Color ☐ None ☐ Other

Odor ☐ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Petroleum/Gas _____
☐ Solvents ☐ Other

Clarity ☐ Clear ☐ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ Other

Floating Solids ☐ No ☐ Yes

Settled Solids* ☐ No ☐ Yes

Suspended Solids ☐ No ☐ Yes

Foam (gently shake sample) ☐ No ☐ Yes

Oil Sheen ☐ None ☐ Flecks ☐ Globs ☐ Sheen ☐ Slick
☐ Other

Other Obvious Indicators of Stormwater Pollution ☐ No ☐ Yes

* Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions taken below (attach additional sheets as necessary).

A. Name: B. Title:

C. Signature: D. Date Signed:

ENVIRONMENTAL PARTNERS

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STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Transfer Station

Town of Milford

June 2020

ENVIRONMENTAL PARTNERS

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SECTION 1 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) has been developed by the Town of Milford to address the requirements of the United States Environmental Protection Agency's (USEPA'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.

The 2016 Massachusetts MS4 Permit requires 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 Measure 6, Good Housekeeping and Pollution Prevention for Permittee Owned Operations, the permittee is required, per Section 2.3.7.b of the 2016 Massachusetts MS4 Permit (page 50-54), to:

> *...develop and fully implement a SWPPP for each 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 as determined by the permittee.*
>
> *The SWPPP shall contain the following elements:*
> 1. *Pollution Prevention Team*
> 2. *Description of the facility and identification of potential pollutant sources.*
> 3. *Identification of stormwater controls*
> 4. *Management practices including: minimize or prevent exposure, good housekeeping, preventative maintenance, spill prevention and response, erosion and sediment control, management of runoff, management of salt storage piles or piles containing salt, employee training, and maintenance of control measures.*
> 5. *Site inspections*

This SWPPP accomplishes these requirements by:

- Providing an inventory of the materials and equipment at a facility that have the potential to cause stormwater pollution, and identifying locations where these materials are stored.
- Describing how stormwater is managed at a facility, including: engineered storm drain system conveyance; on-site pretreatment, treatment and infiltration systems; and discharges to surface water directly from the site.

- Reviewing activities that occur at the facility that represent a potential for stormwater pollution.
- Describing the Best Management Practices (BMPs) that will be implemented at the facility to reduce, eliminate and prevent the discharge of pollutants to stormwater.
- Identifying the employees responsible for developing, implementing, maintaining, and revising, as necessary, this SWPPP.
- Establishing a schedule and description of site inspections to be conducted at the facility to determine if the SWPPP is effective in preventing the discharge of pollutants.
- Serving as a tool for the facility employees, including a place to maintain recordkeeping associated with these requirements.

SECTION 2 DETAILED FACILITY ASSESSMENT

2.1 FACILITY SUMMARY

The Transfer Station is located at 95 Cedar Street, Milford MA and is owned and operated by the Town of Milford. The Locus Map in Figure 1 shows the location of the facility within the Town of Milford.

The Highway Department is primarily responsible for activities at, and maintenance of, the facility. Prior to the summer of 2020, the Milford Board of Health was primarily responsible for the Transfer Station.

2.2 SITE INSPECTION

The site inspections associated with the development of this SWPPP were completed on June 23 and September 2, 2020. The inspections were conducted by Annie Tucker, Environmental Scientist of Environmental Partners.

During the site inspections, information related to activities at the site, vehicles stored at the site, fueling operations, material storage, transport of oil and other materials, and spill history were gathered.

2.3 POLLUTION PREVENTION TEAM

A Pollution Prevention Team for the Transfer Station has been created and designated the task of developing, implementing, maintaining, and revising, as necessary, the SWPPP for this facility. Listed below are Pollution Prevention Team members and their respective responsibilities.

Responsibilities assigned to one or more members of the Pollution Prevention Team include:

- Implementing, administering and revising the SWPPP
- Regularly inspecting stormwater control structures
- Conducting stormwater training
- Recordkeeping

Leader: Scott Crisafulli **Office Phone:** (508) 473-1274
Title: Highway Surveyor

Responsibilities: Considers all stages of plan development, inspections, and implementation; coordinates employee training programs; maintains all records and ensures that reports are submitted; and oversees sampling program. Responsible for certifying the completeness and accuracy of the SWPPP.

Member: Mike Dean **Office Phone:** (508) 634-2317
Title: Town Engineer

Responsibilities: Implements the preventative maintenance program; oversees good housekeeping activities; serves as spill response coordinator; conducts inspections; assists with employee training programs; and conducts sampling/visual monitoring.

2.4 FACILITY DESCRIPTION

The primary purpose of the Transfer Station is to operate the Town of Milford's waste transfer and recycling operations. Activities that occur at the site are described in SECTION 2.7

The facility covers approximately 3.2 acres and contains the structures and other features shown on the Site Map in Figure 2 and described in detail in the following sections. Components shown on the Site Map include:

- Outfalls to a receiving water and the name of the receiving water
- Direction of surface water flow
- Aboveground storage tanks (outdoor waste oil storage)
- Materials stockpiles
- Waste disposal areas
- Facility Structures

2.5 FACILITY STRUCTURES

Storage Building

Small equipment, signage, and tools are stored in the Garage located in the northeast portion of the property. This building does not contain floor drains and is fully enclosed. Latex paint, spray paint, and similar products are also stored in the Garage.

Administrative Building

The Transfer Station administrative office, the Attendants' Shed, is located at the entrance to the facility, in the northern portion of the property. This building includes administrative space and a bathroom. The bathroom does not contain a floor drain.

Recycling Sheds

There are two sheds at the Transfer Station. The first shed, the Recycling Bin Shed, is located south of the Garage and stores recycling bins. The second shed, the Universal Waste Shed, is located south of the first shed and stores mercury containing products, including thermostats and thermometers. Additionally, the Universal Waste Shed stores fluorescent lamps and nickel cadmium batters. Both sheds are fully enclosed and do not contain any floor drains.

2.5.1 Additional Site Features

Aboveground Storage Tank

An aboveground storage tank (AST) at the Transfer Station is used for storage of waste oil. An inventory of all significant materials is included in SECTION 2.12. The sole AST is located south of the Garage and stores 550 gallons of waste oil. It is not covered. However, it is located on an impervious surface and is located in an area that does not receive a substantial amount of runoff.

Subsurface Tank

The Transfer Station has one subsurface leaching field/pit that receives discharge from the facility's sole bathroom within the Attendants' Shed. This system has an estimated capacity of 300 to 500 gallons and is pumped out as needed. The exact location of this system on the property is unknown.

2.6 SITE DRAINAGE

No stormwater from adjacent properties impacts the Transfer Station property.

Sheet Flow

Drainage from the impervious surfaces at the Transfer Station is directed to the eastern edge of the property. During large rain events, runoff pools at the southwest corner of the paved area of the property. The Town is currently looking into methods to better manage stormwater runoff at this facility.

Engineered Drainage

There is no engineered drainage system at the Transfer Station.

2.6.1 Receiving Waters

Stormwater runoff generated from this facility discharges to an unnamed pond southeast of the property. The pond does not have any impairments identified. If impairments are identified in the future, they should be added to Table 1, below.

Table 1: Impaired Waters Receiving Drainage from the Facility
Transfer Station

Water Body Name	ID	Category	Impairment(s)
			•
			•
			•
			•
			•
			•

2.7 SITE ACTIVITIES

The following activities occur at the facility:

- Facility or Building Maintenance
- Chemical unloading, handling, and/or storage (including paint and flammables)
- Solid waste management (including scrap metal)
- Tool storage
- Equipment storage
- Waste Handling and Disposal
- Waste oil storage

Below is a discussion of site activities and the potential pollutant sources associated with each, as well as measures taken to minimize pollution. Locations of each activity are shown on the Site Plan (Figure 2).

The Transfer Station does not store hazardous materials other than those noted previously, and no obsolete vehicles or other potential sources of pollutants are kept in any structure at the Transfer Station.

No solvent-based parts washers were observed in any structure at the Transfer Station. Any hazardous waste materials are either collected by a third party vendor contracted by the Town of Milford, or collected at the annual Household Hazardous Waste (HHW) Day that is hosted at the Highway Department Facility by the Milford Board of Health. Waste materials from the Transfer Station's operations that may be collected at the annual HHW Day include used motor vehicle fluids, such as used antifreeze and brake fluid. These materials are properly labeled and stored using appropriate Best Management Practices between the time of generation and disposal.

The Highway Department does not apply or utilize fertilizers, herbicides, or pesticides at the Transfer Station. No fertilizers, herbicides, or pesticides are stored at the Transfer Station.

2.7.1 Solid Waste Management

Potential Sources of Stormwater Pollution

Solid waste production and storage locations present the threat to contaminate stormwater with pathogens, including bacteria and viruses, nutrients, including phosphorus and nitrogen, metals and sediments.

Solid waste may be classified as both hazardous and non-hazardous waste consisting of agricultural, construction and demolition, dead animals, industrial, municipal, and tire waste.

Pollution Prevention

To prevent or reduce the potential for stormwater pollution from solid waste management practices the following preventative maintenance procedures are recommended:

1. All staff shall be properly trained in correct solid waste management practices, including waste disposal and spill prevention and response. All employees shall also be knowledgeable of the potential hazards associated with solid waste handling and storage.
2. Each waste storage location shall be properly labeled and all significant sources of pollution shall be kept in a secure, covered and contained area.
3. The facility and storage containers shall remain locked at all times other than during normal hours of operation.
4. All waste storage containers and waste handling equipment shall be routinely inspected for signs of spills, leaks, corrosion or general deterioration.
5. The facility shall maintain spill response materials in accordance with SOP 4, "Spill Response and Cleanup".

2.7.2 Equipment Storage

Potential Sources of Stormwater Pollution

Equipment storage activities are a potential source of pollution due to the diesel fuel, gasoline, oil, hydraulic fluid, antifreeze and similar hazardous material or fuel the machinery may contain. In addition, machinery may pick up pollutants during the course of offsite activities or at other facilities, and then deposit these pollutants at the storage facility.

Pollution Prevention

Regular visual inspection and maintenance of equipment can greatly reduce the potential for pollution by finding and addressing leaks before pollution of the environment occurs. When in storage, equipment should be kept on a covered slab or within a building with a common drain. Discharge to this drain shall be managed by a devise that is designed to remove oils and gasoline.

No equipment should be kept in an area where leaks could result in pollutants entering catch basins, channels leading to outfalls, or the engineered storm drain system. If equipment is stored outdoors, catch basins or engineered drainage system structures should include devices intended to remove oils and sediments prior to entering the system. These treatment devices should be inspected and replaced at the frequency recommended by the manufacturer.

2.7.3 Waste Handling and Disposal

Potential Sources of Stormwater Pollution

Waste handling and disposal facilities and activities present the potential to contaminate stormwater with pathogens (including bacteria and viruses), nutrients, including phosphorus and nitrogen, fertilizers, pesticides and sediments.

There are several classifications of waste which contribute to stormwater pollution, including:

1. Solid Waste
2. Hazardous Materials and Waste
3. Pesticides and Fertilizers
4. Petroleum Products
5. Detergents

Pollution Prevention

A variety of measures are considered appropriate to prevent pollution from waste handling and disposal activities, based on the waste classifications noted previously.

Solid Waste

1. Designate a waste collection area on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a receiving water.
2. Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
3. Schedule waste collection to prevent the containers from overfilling.
4. Clean up spills immediately and in accordance with SOP 4, “Spill Response and Cleanup Procedures” included in Appendix A.

Hazardous Materials and Wastes

1. To prevent leaks, empty and clean hazardous waste containers before disposing of them.
2. Never remove the original product label from the container. Follow the manufacturer's recommended method of disposal, printed on the label.
3. Never mix excess products when disposing of them, unless specifically recommended by the manufacturer.
4. Clean up spills immediately and in accordance with SOP 4 “Spill Response and Cleanup”.

Pesticides, Fertilizers and Petroleum Products

1. Do not handle the materials more than necessary.
2. Store materials in a dry, covered, contained area.
3. Clean up spills immediately and in accordance with SOP 4, “Spill Response and Cleanup”.

Detergents

1. Never dump wastes containing detergents to a storm drain system. All wastes containing detergents shall be directed to a sanitary sewer system for treatment at a wastewater treatment plant.

In addition to the pollution prevention requirements a waste management plan is recommended. The plan shall include employee training and signage informing individuals of the hazards associated with improper storage, handling and disposal of wastes. It is imperative that all employees are properly trained and follow the correct procedures to reduce or eliminate stormwater pollution. Routine visual inspection of storage and use areas is critical. The visual inspection process shall include identification of containers or equipment which could malfunction and cause leaks or spills. The equipment and containers shall be inspected for the following:

1. Leaks
2. Corrosion
3. Support or Foundation Failure
4. Other Deterioration

In the case a defect is found, immediately repair or replace.

2.7.4 Waste Oil Storage

Potential Sources of Stormwater Pollution

When not stored properly, waste oil can be a potential source of petroleum in stormwater. Waste oil containers can leak, and spills can occur during transportation.

Pollution Prevention

All waste oil containers should be properly labeled and stored with secondary containment. Containers should be regularly inspected for rust, leaks, or other signs of deterioration. Defective containers should be promptly removed and replaced. A spill response kit should be located wherever waste oil is stored. Facility personnel should know where the spill kit is located and be familiar with the procedures outlined in SOP 4 "Spill Response and Cleanup Procedures" in Appendix A. Used oil filters should also be properly disposed.

Care should be taken when transferring used oil to and from storage containers. For additional information see SOP 7 "Fuel and Oil Handling Procedures" found in Appendix A.

Waste oil should be stored indoors or under a covered structure to prevent exposure to precipitation. Floor drains in waste oil storage areas should drain to a device intended to remove oils and gasoline. When possible, steps should be taken to recycle waste oil or reduce the amount generated.

2.8 VEHICLE AND EQUIPMENT INVENTORY

The Transfer Station does not store vehicles on its property. If future vehicles are acquired, they should be added to Table 2, below.

Table 2: Vehicle Inventory
Transfer Station

Vehicle Type	Number on Site

2.9 LOCATION OF LEAK AND SPILL CLEANUP MATERIALS

There are no leak and spill cleanup materials stored at the Transfer Station. If cleanup supplies are acquired in the future, they should be identified and inventoried in Table 3, below.

Table 3: Leak and Spill Cleanup Materials
Transfer Station

Building or Area	Location	Materials Available

2.10 ALLOWABLE NON-STORMWATER DISCHARGES

A non-stormwater discharge is defined as any discharge or flow to the engineered storm drain system that is not composed entirely of stormwater runoff.

Allowable non-stormwater discharges that could occur at this facility include:

- Firefighting activities
- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(20))
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water, springs
- Water from crawl space pumps
- Footing drains
- Flows from riparian habitats and wetlands
- Residential building wash waters without detergents

It has been determined that the above non-stormwater discharges at the Transfer Station do not represent a significant contribution of pollution to the MS4 or the waters of the United States. Therefore, these are considered to be authorized under the current MS4 permit.

2.11 EXISTING STORMWATER MONITORING DATA

There has been no historical stormwater monitoring data recorded at the Transfer Station. If new analytical stormwater sampling occurs, it should be recorded in Table 4.

Table 4: Existing Stormwater Monitoring Data
Transfer Station

Building or Area	Location	Type of Monitoring

2.12 SIGNIFICANT MATERIAL INVENTORY

Materials stored include those specified in SECTION 2.7, "Site Activities". An inventory of these materials at the Transfer Station is included in Table 5, which also reviews the likelihood for each identified material to come in contact with stormwater. The type of container has also been identified. Oil, gasoline, and other petroleum-based materials are listed separately in the table.

Table 5: Significant Material Inventory
Transfer Station

Material	Storage Location	Quantity	Potential Pollutant	Covered (C) or Enclosed (E)	Likelihood of Contact with Water
Petroleum-Based Compounds					
Motor Oil	Garage	2.5 Quarts	Petroleum hydrocarbons	E	Low
Waste Oil	Waste Oil Collection Tank	550 Gallons	Petroleum hydrocarbons	*	Low
Total Volume of Oil at Facility = 550.625 Gallons					
Non-Petroleum Significant Materials					
Spray Lubricant	Garage	1 Canisters	Petroleum hydrocarbons	E	Low
Batteries, Used Lead Acid	South of the Garage	60 Batteries	Lead, sulfuric acid; possible particulate matter and residual oil	*	High
Paint, Oil-Based	Garage	400 Gallons	Petroleum constituents, including volatile and	E	Low

Material	Storage Location	Quantity	Potential Pollutant	Covered (C) or Enclosed (E)	Likelihood of Contact with Water
			semivolatile organic compounds		
Paint, Spray	Garage	30 Canisters	Petroleum constituents, including volatile and semivolatile organic compounds	E	Low
Solid Waste, Recyclable	Recycling Collection Containers	0.24 Tons per Week	Miscellaneous debris/solids, particulate matter, metals	*	High
Solid Waste, C&D	Recycling Collection Containers	2.14 Tons per Month	Particulate matter, solids, metals	*	High

* Material stored without cover, but with proper applicable containment.

2.13 APPLICABILITY OF SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) REQUIREMENTS

Under federal regulations 40 CFR Part 112 (and Amendments), a Spill Prevention, Control, and Countermeasure (SPCC) Plan is required when a facility has an aboveground oil storage capacity greater than 1,320 gallons, when including containers with a capacity of 55 gallons or more. The Transfer Station does not have aboveground oil storage capacity that exceeds 1,320 gallons.

2.14 DESCRIPTION OF SIGNIFICANT MATERIAL STORAGE AREAS

Many activities at the Transfer Station which involve the materials included in Table 5 occur within contained garages or bays. These activities may include minor equipment repair and lubrication.

Fueling of all Town vehicles occurs at the Fuel Island located at the Highway Department Facility. All bulk delivery of fuel to the Fuel Island is monitored by a Town of Milford employee.

Waste oil is stored in the waste oil collection AST, which has internal containment or is located on an appropriate impervious surface.

2.15 LIST OF SIGNIFICANT LEAKS OR SPILLS

There have been no significant leaks or spills that have occurred at the Transfer Station in the last three years. If significant leaks or spills occur in the future, they should be recorded in Table 6, below.

Table 6: Significant Leaks or Spills
Transfer Station

Building or Area	Location	Type of Monitoring

Forms included in Appendix B will be used to document any spill or leak that occurs at the facility in the future.

2.16 STRUCTURAL BMPS

The Transfer Station does not have any structural BMPs, such as porous pavement, an infiltration basin, or deep sump catch basin. These onsite constructed systems provide pretreatment or treatment of stormwater flows. If structural BMPs are installed in the future, they should be described in this section.

2.17 SEDIMENT AND EROSION CONTROL

Site topography at the Transfer Station prevents drainage of stormwater and any associated sedimentation from entering the Town of Milford storm drain system. Discharge from the Transfer Station can enter an unnamed pond southeast of the parcel, which may present a sedimentation concern. However, the majority of this discharge is from the wooded portion of the parcel and thus would not contain excessive sediment. There are no erosion concerns at this facility.

SECTION 3 NON-STRUCTURAL CONTROLS

3.1 GOOD HOUSEKEEPING

Good housekeeping practices are activities, often conducted daily, that help maintain a clean facility and prevent stormwater pollution problems. The following is a list of good housekeeping measures that are practiced at the facility:

- Used spill cleanup materials are disposed of properly.
- Materials are stored indoors or in covered areas to minimize exposure to stormwater.
- No fertilizers, herbicides, or pesticides are stored or used at the facility.
- Lead-acid batteries are stored indoors and within secondary containment.
- Hazardous materials storage lockers with spill containment are used. Storage areas are located away from vehicle and equipment paths to reduce the potential of accident related leaks and spills.
- Storage drums and containers are not located close to storm drain inlets.
- All hazardous material storage areas and containers have proper signage, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment.
- All materials, waste oil storage containers, and gas cans are properly labeled.
- Tools and materials are returned to designated storage areas after use.
- Waste materials are properly collected and disposed of.
- Different types of wastes are separated as appropriate.
- Regular waste disposal is arranged.
- Work areas are clean and organized.
- Work areas are regularly swept or vacuumed to collect metal, wood, and other particulates and materials.
- Obtain only the amount of materials required to complete a job.
- Materials are recycled when possible.
- Staff is familiar with manufacturer directions for proper use of materials and associated Safety Data Sheets (SDSs).
- Staff is familiar with proper use of equipment.
- Bollards, berms, and containment features are in place around areas and structures where fluids are stored.
- Drip pans are used for maintenance operations involving fluids and under leaking vehicles and equipment waiting repair.

The facility often maintains a supply of spill cleanup materials on the property. An inventory of spill containment, control, and cleanup materials and spill kits maintained at the Transfer Station is shown in Table 3.

3.2 PREVENTATIVE MAINTENANCE

Preventative Maintenance can minimize the occurrence of stormwater pollution by addressing issues before they become problems. Vehicles and equipment should be regularly inspected to

prevent leaks of fuel, oil, and other liquids. Structural stormwater controls should be regularly maintained to prevent inadequate performance during storm events.

The following is a list of preventative maintenance procedures practiced at the facility

- All staff members are aware of spill prevention and response procedures.
- All staff members have received formal spill prevention and response procedure training.
- All equipment fueling procedures are completed by qualified personnel trained in spill response procedures.
- Hydraulic equipment is kept in good repair to prevent leaks.
- Vehicle storage areas are inspected frequently for evidence of leaking oil.
- Material storage tanks and containers are regularly inspected for leaks.
- All material and bulk deliveries are monitored by facility employees.
- All waste oil is fully contained and the containers are inspected regularly.

3.3 BEST MANAGEMENT PRACTICES

In a SWPPP, existing and planned BMPs are identified that will prevent or reduce the discharge of pollutants in stormwater runoff for each area of concern listed in SECTION 2.

To prevent or reduce the potential of stormwater contamination from petroleum products, the following BMPs shall continue to be followed:

1. Follow Standard Operating Procedure(s) during delivery of waste oil to the equipment/waste oil storage bay. These SOPs are included in Appendix A.
2. Follow Standard Operating Procedure(s) during delivery of bulk oil to the emergency generator and bulk fuel to the Fuel Island. These SOPs are included in Appendix A.
3. Minimize the volume of gasoline stored within the buildings and on the site.
4. Clean up any oil spills observed in the parking lot, garages, or other surfaces in a timely manner.
5. Monitor all material deliveries.
6. Inspect all storage tanks prior to filling activities for spills, leaks and corrosion.

3.4 SPILL PREVENTION AND RESPONSE

The following procedures apply to the facility:

- All personnel are instructed in location, use, and disposal of spill response equipment and supplies maintained at the site such as oil absorbent materials.
- The Pollution Prevention Team leader will be advised immediately of all spills of hazardous materials or regulated materials, regardless of quantity.
- Spills will be evaluated to determine the necessary response. If there is a health hazard, fire or explosion potential, 911 will be called. If a spill exceeds five gallons <u>or</u> threatens surface waters, including the storm drain system, state or federal emergency response agencies will be called.
- Spills will be contained as close to the source as possible with oil-absorbent materials. Additional materials or oil-absorbent socks will be utilized to protect adjacent catch basins.

SECTION 4 PLAN IMPLEMENTATION

4.1 EMPLOYEE TRAINING

Regular employee training is required for employees who work in areas where materials or activities are exposed to stormwater, or who are responsible for implementing activities identified in the SWPPP, including all members of the Pollution Prevention Team.

The Highway Department is responsible for stormwater management training for Transfer Station employees. This Department coordinates training related to stormwater management on at least an annual basis to review specific responsibilities for implementing this SWPPP, what and how to accomplish those responsibilities, including BMP implementation.

Additionally, general awareness training is provided regularly (preferably annually) to all employees whose actives may impact stormwater discharges. The purpose of this training is to educate workers on activities that can impact stormwater discharges and to help implement BMPs.

All employees responsible for the fueling or lubrication of vehicles or equipment stored at the facility will be trained regularly (preferably annually). The topics below will be covered at employee training sessions.

1. Spill prevention and response.
2. Good housekeeping.
3. Materials management practices

Pollution Prevention Team members will meet at least twice a year to discuss the effectiveness of and improvement to the SWPPP. Appendix C contains copies of training documentation from these training activities including attendance sheets, instructor name and affiliation, date, time, and location of the training.

4.2 SITE INSPECTION REQUIREMENTS

It is required that the entire Transfer Station be inspected at least once each calendar quarter when the facility is in operation (at least one inspection must be conducted during a period when stormwater discharge is occurring). Scott Crisafulli or other designated individual is responsible for completing this inspection.

The inspection must check for evidence of pollution, evaluate non-structural controls in place at the site, and inspect equipment. The site inspection report must include:

- The inspection date and time
- The name of the inspector
- Weather information and a description of any discharge occurring at the time of the inspection
- Identification of any previously unidentified discharges from the site
- Any control measures needing maintenance or repair
- Any failed control measures that need replacement

- Any SWPPP changes required as a result of the inspection
- Signed certification statement

The inspection form for these inspections, and copies of completed inspection forms, are included in Appendix D.

Corrective actions may be required based on evidence of past stormwater pollution or the high potential for future stormwater pollution to occur. Information about any issues and the respective corrective actions must be included in a Compliance Evaluation report. The permittee must repair or replace control measures in need of repair or replacement before the next anticipated storm event if possible, or as soon as practicable. In the interim, the permittee shall have back-up measures in place. The Compliance Evaluation report must be kept with the SWPPP and must state the problem, the solution, and when the solution was implemented.

4.3 RECORDKEEPING AND REPORTING

The permittee must keep a written record (hardcopy or electronic) of all activities required by the SWPPP including but not limited to maintenance, inspections, and training for a period of at least five years.

This SWPPP shall be kept at the Highway Department Facility and shall be updated if any of the conditions in SECTION 2.21 occur. The SWPPP and records shall be made available to state or federal inspectors and the general public upon request.

The 2016 Massachusetts MS4 Permit requires that each permittee report on the findings from Site Inspections in the annual report to USEPA and MassDEP.

Inspections of the Transfer Station should be performed at least quarterly (at least one during stormwater discharge) and described in the Annual Report, including any corrective actions taken, to demonstrate that operation of the Transfer Station is in compliance with the 2016 Massachusetts MS4 Permit.

4.4 TRIGGERS FOR SWPPP REVISIONS

The Town of Milford shall review this SWPPP regularly to determine if any update or revision is required. Changes that may trigger revision include:

- An increase in the quantity of any potential pollutant stored at the facility;
- The addition of any new potential pollutant (not already addressed in this SWPPP) to the list of materials stored or used at the facility;
- Physical changes to the facility that expose any potential pollutant (not presently exposed) to stormwater;
- Presence of a new authorized non-stormwater discharge at the facility; or
- Addition of an activity that introduces a new potential pollutant.

Changes in activity may include an expansion of operations, or changes in any significant material handling or storage practices which could impact stormwater.

The amended SWPPP will describe the new activities that could contribute to increased pollution, as well as control measures that have been implemented to minimize the potential for pollution.

This SWPPP will be amended if a state or federal inspector determines that it is not effective in controlling stormwater pollutants discharged to waterways.

SECTION 5 SWPPP 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.

Authorized Official

Highway Surveyor
Title

1-6-21
Date

FIGURES

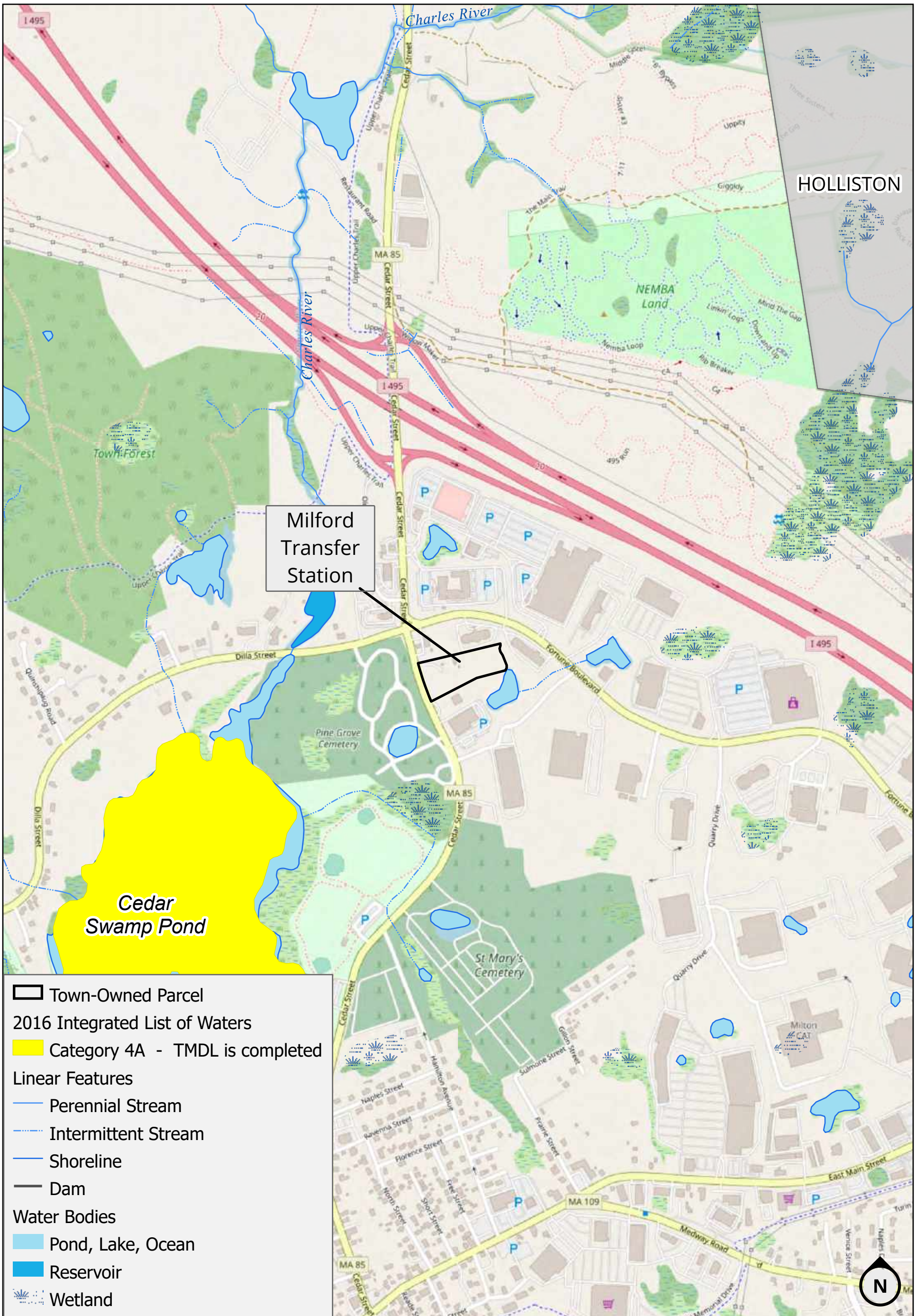

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Figure 1 Locus Map

Milford, Massachusetts

0 250 500 1,000 Feet

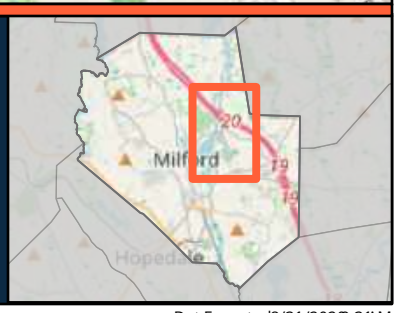

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Figure 2 Site Map

Milford, Massachusetts

ENVIRONMENTAL PARTNERS

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APPENDIX A

Standard Operating Procedures

STANDARD OPERATING PROCEDURE 4:

SPILL RESPONSE AND CLEANUP PROCEDURES

Introduction

Municipalities are responsible for any contaminant spill or release that occurs on property they own or operate. Particular areas of concern include any facilities that use or store chemicals, fuel oil or hazardous waste, including schools, garages, Highway Department yards, and landfills. Implementation of proper spill response and cleanup procedures can help to mitigate the effects of a contaminant release.

Responding to a Spill

In the event of a spill, follow these spill response and cleanup procedures:

1. Notify a member of the facility's Pollution Prevention Team, the facility supervisor, and/or the facility safety officer.
2. Assess the contaminant release site for potential safety issues and for direction of flow.
3. With proper training and personal protective equipment, complete the following:
    a. Stop the contaminant release;
    b. Contain the contaminant release through the use of spill containment berms or absorbents;
    c. Protect all drains and/or catch basins with the use of absorbents, booms, berms or drain covers;
    d. Clean up the spill;
    e. Dispose of all contaminated products in accordance with applicable federal, state and local regulations.
        i. Products contaminated with petroleum shall be handled and disposed of as described in MassDEP policy WCS-94-400, Interim Remediation Waste Management Policy for Petroleum Contaminated Soils, http://www.mass.gov/dep/cleanup/laws/94-400.pdf.
        ii. Products saturated with petroleum products or other hazardous chemicals require special handling and disposal by licensed transporters. Licensed transporters will pick up spill contaminated materials for recycling or disposal. Save the shipping records for at least three years.
        iii. Waste oil contaminated products:
            1. Perform the "one drop" test to ensure absorbents do not contain enough oil to be considered hazardous. Wring absorbents through a paint filter. If doing so does not generate one drop of oil, the materials are not hazardous.
            2. If absorbents pass the "one drop" test they may be discarded in the trash, unless contaminated with another hazardous waste.
                a. It is acceptable to mix the following fluids and handle them as waste oil:
                i. Waste Motor Oil;

ii. Hydraulic Fluid;
iii. Power Steering Fluid;
iv. Transmission Fluid;
v. Brake Fluid;
vi. Gear Oil.

a. Do not mix the following materials with waste oil, store each separately:
    i. Gasoline;
    ii. Antifreeze;
    iii. Brake and Carburetor Cleaners;
    iv. Cleaning Solvents;
    v. Other Hazardous Wastes.

3. If absorbents do not pass the “one drop” test they should be placed in separate metal containers with tight fittings lids, labeled “Oily Waste Absorbents Only”.
4. If you need assistance containing and/or cleaning up the spill, or preventing it from discharging to a surface water (or an engineered storm drain system), contact your local fire department using the number listed below, however in the case of an emergency call 911;
    a. Milford (508) 743-2256
    b. Hopedale (508) 493-1050;
    c. Holliston (508) 429-4631;
    d. Medway (508) 533-3211;
    e. Mendon (508) 493-5330;
    f. Upton (508) 529-3421;
    g. Bellingham (508) 966-1112;
    h. Franklin (508) 528-2323;
    i. Northbridge (508) 234-8448;
    j. Uxbridge (508) 278-7725.
5. Contact the MassDEP 24-hour spill reporting notification line, toll-free at (888)-3104-1133;
    n. The following scenarios are exempt from MassDEP reporting requirements:
        i. Spills of less than 10 gallons of petroleum and do not impact a water body;
        ii. Spills of less than one pound of hazardous chemicals and do not present an imminent health or safety hazard;
        iii. Spills from passenger vehicle accidents;
        iv. Spills within a vault or building with a watertight floor and walls that completely contain all released chemicals.

Procedures for Reporting Spill Response

When contacting emergency response personnel or a regulatory agency, or when reporting the contaminant release, be prepared to provide the following information:

1. Your name and the phone number you are calling from.
2. The exact address and location of the contaminant release.
3. Specifics of release, including:
    a. What was released;
    b. How much was released, which may include:
        i. Pounds;
        ii. Gallons;
        iii. Number of containers.
4. Where was the release sent/what was contaminated, addressing:
    a. Pavement;
    b. Soil;
    c. Drains;
    d. Catch Basins;
    e. Water Bodies;
    f. Public Street;
    g. Public Sidewalk.
5. The concentration of the released contaminant.
6. What/who caused the released contaminant.
7. Is the release being contained and/or cleaned up, or is the response complete.
8. Type and amount of petroleum stored on site, if any.
9. Characteristics of contaminant container, including
    a. Tanks;
    b. Pipes;
    c. Valves.

Maintenance and Prevention Guide

Prevention of spills is preferable to even the best response and cleanup. To mitigate the effects of a contaminant release, provide proper maintenance and inspection at each facility.

To protect against contaminant release adhere to the following guidance:

1. Ensure all employees are properly trained to respond in the case of a spill, understand the nature and properties of the contaminant and understand the spill control materials and personnel safety equipment. Maintain training records of current personnel on site and retain training records of former personnel for at least three years from the date last worked at the facility;
2. Provide yearly maintenance and inspection at all municipal facilities, paying particular attention to underground storage tanks. Maintain maintenance and inspection records on site;
3. Implement good management practices where chemicals and hazardous wastes are stored;
    d. Ensure storage in closed containers inside a building and on an impervious surface;

   e. If storage cannot be provided inside, ensure secondary containment for 110 percent of the maximum volume of the storage container;
   f. Locate storage areas near maintenance areas to decrease the distance required for transfer;
   g. Provide accurate labels, MSDS information and warnings for all stored materials;
   a. Regularly inspect storage areas for leaks;
   b. Ensure secure storage locations, preventing access by untrained or unauthorized persons;
   c. Maintain accurate records of stored materials.
4. Replace traditional hazardous materials such as pesticides and cleansers with non-hazardous products such as bio-lubricants which can reduce response costs in the case of a spill;
5. Maintain a oil and grease spill response kit with the following materials, at a minimum, at each facility:
   a. 6.5 gallon bucket with screw top lid and handle
   b. 10 gallons of sand
   c. 200 pounds of Speedi Dry absorbent
   d. Drain covers
   e. Spill containment berms
   f. (4) 3’ absorbent socks
   g. (16) 16” x 18” absorbent pads
   h. Goggles
   i. Nitrile gloves
   j. Disposable bags to dispose of used materials
   k. Laminated contacts list shall include the following names and numbers:
      i. Safety Officer;
      ii. Facility Supervisor;
      iii. Local Fire Department;
      iv. MassDEP spill report notification line;
      v. MassDEP Regional Office;
      vi. Hazardous Waste Compliance Assistance Line;
      vii. Household Hazardous Products Hotline;
      viii. Massachusetts Department of Fire Services;
      ix. Licensed Site Professionals Information.

Attachments

1. Spill Response and Cleanup Contact List

SPILL RESPONSE AND CLEANUP CONTACT LIST

	Phone Number	Date and Time contacted
Safety Officer	(508) 473-1274	
Facility Supervisor: Scott Crisafulli	(508) 473-1274	
Milford Fire Department	(508) 473-2256	
MassDEP 24-Hour Spill Reporting	(888)-304-1133	
MassDEP Regional Offices:		
Northeast Regional Office	(978) 694-3200	
Southeast Regional Office	(508) 946-2700	
Central Regional Office	(508) 792-7650	
Western Regional Office	(413) 784-1100	
Hazardous Waste Compliance Assistance Line	(617) 292-5898	
Household Hazardous Products Hotline	(800) 343-3420	
Massachusetts Department of Fire Services	(978) 567-3100 or (413) 587-3181	
Licensed Site Professionals Association	(781) 876-8915	
Licensed Site Professionals Board	(617) 556-1091	

STANDARD OPERATING PROCEDURE 7:

FUEL AND OIL HANDLING PROCEDURES

Introduction

Spills, leaks, and overfilling can occur during handling of fuels and petroleum-based materials, even in small volumes, representing a potential source of stormwater pollution. This Standard Operating Procedure addresses a variety of ways by which fuels and petroleum-based materials can be delivered, as well as steps to be taken when petroleum products (such as waste oil) are loaded onto vehicles for offsite disposal or recycling. Delivery, unloading, and loading of waste oils are hereafter referred to as "handling".

For all manners of fuel and oil handling described below, a member of the facility's Pollution Prevention Team (or another knowledgeable person familiar with the facility) shall be present during handling procedures. This person shall ensure that the following are observed:

1. There is no smoking while fuel handling is in process or underway.
2. Sources of flame are kept away while fuel handling is being completed. This includes smoking, lighting matches, carrying any flame, or carrying a lighted cigar, pipe, or cigarette.
3. The delivery vehicle's hand brake is set and wheels are chocked while the activity is being completed.
4. Catch basins and drain manholes are adequately protected.
5. No tools are to be used that could damage fuel or oil containers or the delivery vehicle.
6. No flammable liquid shall be unloaded from any motor vehicle while the engine is operating, unless the engine of the motor vehicle is required to be used for the operation of a pump.
7. Local traffic does not interfere with fuel transfer operations.
8. The attending persons should watch for any leaks or spills
    a. Any small leaks or spills should be immediately stopped, and spilled materials absorbed and disposed of properly. Refer to SOP 4, "Spill Response and Cleanup Procedures", for examples of spill cleanup and response materials.
    b. In the event of a large spill or one that discharges to surface waters or an engineered storm drain system, the facility representative shall activate the facility's Stormwater Pollution Prevention Plan (SWPPP) and report the incident as specified within.

Delivery by Bulk (Tanker) Truck

Procedures for the delivery of bulk fuel shall include the following:

1. The truck driver shall check in with the facility upon arrival.
2. The facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible.

Refer to SOP 4, “Spill Response and Cleanup Procedures”, for examples of spill cleanup and response materials.

3. The facility representative shall check to ensure that the amount of delivery does not exceed the available capacity of the tank.
    a. A level gauge can be used to verify the level in the tank.
    b. If a level gauge is not functioning or is not present on the tank, the tank should be stick tested prior to filling.
4. The truck driver and the facility representative shall both remain with the vehicle during the delivery process.
5. The truck driver and the facility representative shall inspect all visible lines, connections, and valves for leaks.
6. When delivery is complete and the hoses are removed, buckets should be placed underneath connection points to catch drippings.
7. The delivery vehicle shall be inspected prior to departure to ensure that the hose is disconnected from the tank.
8. The facility representative shall inspect the fuel tank to verify that no leaks have occurred, or that any leaked or spilled material has been cleaned and disposed of properly.
9. The facility representative shall gauge tank levels to ensure that the proper amount of fuel is delivered, and collect a receipt from the truck driver.

Delivery of Drummed Materials

Drummed materials may include motor oil, hydraulic fluid, transmission fluid, or waste oil from another facility (as approved). Procedures for the delivery of drummed materials shall include the following:

1. The truck driver shall check in with the facility upon arrival.
2. The facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible. Refer to SOP 4, “Spill Response and Cleanup Procedures”, for examples of spill cleanup and response materials.
3. The facility representative shall closely examine the shipment for damaged drums.
    a. If damaged drums are found, they shall be closely inspected for leaks or punctures.
    b. Breached drums should be removed to a dry, well-ventilated area and the contents transferred to other suitable containers.
    c. Drums shall be disposed of in accordance with all applicable regulations.
4. Drummed materials shall not be unloaded outdoors during wet weather events.
5. The truck driver and the facility representative shall both remain with the vehicle during the delivery process.
6. Drums shall be handled and unloaded carefully to prevent damage.
7. Upon completion of unloading, the facility representative shall inspect the unloading point and the drums to verify that no leaks have occurred, that any leaked or spilled material has been cleaned up and disposed of properly, and that the unloaded drums are not leaking.
8. The facility representative shall check to ensure that the proper amount of fuel is delivered, and collect a receipt from the truck driver.

Delivery of Drummed Materials

When waste oil or similar oil products need to be removed from the premises, only haulers certified to transport waste oil should be utilized. Procedures for the draining of bulk oil tanks shall include the following:

1. The disposal truck driver shall check in with the facility upon arrival.
2. The facility representative shall ensure that the appropriate spill cleanup and response equipment and personal protective equipment are readily available and easily accessible. Refer to SOP 4, “Spill Response and Cleanup Procedures”, for examples of spill cleanup and response materials.
3. The facility representative shall verify that the volume of waste oil in the tank does not exceed the available capacity of the disposal hauler’s vehicle.
4. The truck driver and the facility representative shall both remain with the vehicle during the tank draining process.
6. When draining is complete and the hoses are removed, buckets should be placed underneath connection points to catch drippings.
7. The disposal hauler vehicle shall be inspected prior to departure to ensure that the hose is disconnected from the tank.
8. The facility representative shall inspect the loading point and the tank to verify that no leaks have occurred, or that any leaked or spilled material has been cleaned up and disposed of properly.
9. The facility representative shall collect a receipt from the truck driver.

Related Standard Operating Procedures

1. SOP 4, Spill Response and Cleanup Procedures

APPENDIX B

Spill Documentation Forms

Significant Spills, Leaks or Other Releases

Instructions:

- Include the descriptions and dates of any incidences of significant spills, leaks, or other releases that resulted in discharges of pollutants to waters of the U.S., through stormwater or otherwise; the circumstances leading to the release and actions taken in response to the release; and measures taken to prevent the recurrence of such releases .
- Provide information, as shown below, for each incident, and attach additional documentation (e.g., photos, spill cleanup records) as necessary. Repeat as necessary by copying and pasting the fields below.

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

APPENDIX C

Training Documentation and Attendance Sheets

Employee Training

Instructions:

- Keep records of employee training, including the date of the training.
- For in-person training, consider using the tables below to document your employee trainings. For computer-based or other types of training, keep similar records on who was trained and the type of training conducted.

Training Date:	
Training Description (including duration and subjects covered):	
Trainer:	
Employee(s) trained	Employee signature

Training Date:	
Training Description (including duration and subjects covered):	
Trainer:	
Employee(s) trained	Employee signature

Training Date:	
Training Description (including duration and subjects covered):	
Trainer:	
Employee(s) trained	Employee signature

APPENDIX D

Facility Inspection Form

Site Inspection Reports

Instructions:

- Include in your records copies of all routine facility inspection reports completed for the facility.
- The sample inspection report is consistent with the requirements in the 2016 Massachusetts MS4 Permit relating to site inspections. If MassDEP provides you with an inspection report, use that form.

Using the Sample Site Inspection Report

- This inspection report is designed to be customized according to the specific control measures and activities at your facility. For ease of use, you should take a copy of your site plan and number all of the stormwater control measures and areas of industrial activity that will be inspected. A brief description of the control measures and areas that were inspected should then be listed in the site-specific section of the inspection report.
- You can complete the items in the "General Information" section that will remain constant, such as the facility name and inspector (if you only use one inspector). Print out multiple copies of this customized inspection report to use during your inspections.
- When conducting the inspection, walk the site by following your site map and numbered control measures/areas of industrial activity to be inspected. Also note whether the "Areas of Materials or Activities exposed to stormwater" have been addressed (customize this list according to the conditions at your facility). Note any required corrective actions and the date and responsible person for the correction.

Stormwater Site Inspection Report

General Information			
Facility Name			
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			

Weather Information
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds ❑ Other: Temperature:
Have any previously unidentified discharges of pollutants occurred since the last inspection? ❑Yes ❑No **If yes, describe:**
Are there any discharges occurring at the time of inspection? ❑Yes ❑No **If yes, describe:**

Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Structural Control Measure	**Control Measure is Operating Effectively?**	**If No, In Need of Maintenance, Repair, or Replacement?**	**Corrective Action Needed and Notes** (identify needed maintenance and repairs, or any failed control measures that need replacement)
1		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
2		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
3		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
4		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
5		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
6		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

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	Structural Control Measure	**Control Measure is Operating Effectively?**	**If No, In Need of Maintenance, Repair, or Replacement?**	**Corrective Action Needed and Notes** (identify needed maintenance and repairs, or any failed control measures that need replacement)
7		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
8		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
9		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
10		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

Areas of Materials or Activities exposed to stormwater

Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of materials or activities at your facility.

	Area/Activity	**Inspected?**	**Controls Adequate (appropriate, effective, and operating)?**	**Corrective Action Needed and Notes**
1	**Material loading/unloading and storage areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
2	**Equipment operations and maintenance areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
3	**Fueling areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
4	**Outdoor vehicle and equipment washing areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
5	**Waste handling and disposal areas**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
6	**Erodible areas/construction**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
7	**Non-stormwater/ illicit connections**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
8	**Salt storage piles or pile containing salt**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
9	**Dust generation and vehicle tracking**	❑Yes ❑No ❑ N/A	❑Yes ❑No	

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
10	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
11	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	
12	**(Other)**	❑Yes ❑No ❑ N/A	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Additional Control Measures

Describe any additional control measures or changes to the SWPPP needed to comply with the permit requirements:

Notes

Use this space for any additional notes or observations from the inspection:

Print inspector name and title:
_____

Signature:_____Date:_____

Quarterly Visual Assessment Reports – additional form when stormwater discharge is occurring

Instructions:

- Include in your records copies of all quarterly visual assessment reports completed for the facility. An example quarterly visual assessment report can be found on the following page.
- At least one quarterly inspection per year must occur while stormwater is discharging.

Quarterly Visual Assessment Form– additional form when stormwater discharge is occurring

(Complete a separate form for each outfall you assess)

Name of Facility:

Outfall Name: "Substantially Identical Outfall"? ☐ No ☐ Yes

Person(s)/Title(s) collecting sample:

Person(s)/Title(s) examining sample:

Date & Time Discharge Began (approx.): Date & Time Visual Sample Collected: Date & Time Visual Sample Examined:

Nature of Discharge: ☐ Rainfall ☐ Snowmelt

Parameter

Color ☐ None ☐ Other

Odor ☐ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Petroleum/Gas _____
☐ Solvents ☐ Other

Clarity ☐ Clear ☐ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ Other

Floating Solids ☐ No ☐ Yes

Settled Solids* ☐ No ☐ Yes

Suspended Solids ☐ No ☐ Yes

Foam (gently shake sample) ☐ No ☐ Yes

Oil Sheen ☐ None ☐ Flecks ☐ Globs ☐ Sheen ☐ Slick
☐ Other

Other Obvious Indicators of Stormwater Pollution ☐ No ☐ Yes

* Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions taken below (attach additional sheets as necessary).

A. Name: B. Title:

C. Signature: D. Date Signed:

ENVIRONMENTAL PARTNERS

1900 Crown Colony Drive, Suite 402
Quincy, MA 02169
P: 617.657.0200 F: 617.657.0201

envpartners.com

APPENDIX N

Municipal Facility Audit Report

ENVIRONMENTAL PARTNERS

June 30, 2020

Mr. Michael Dean, P.E.
Town Engineer
Milford Office of Planning & Engineering
52 Main Street
Milford, MA 01757

RE: NPDES Phase II Stormwater Assistance
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Report

Dear Mr. Dean,

In accordance with our February 2020 contract for professional engineering services, Environmental Partners (EP) is forwarding this report on our audit of municipal facilities for compliance with the Town of Milford's National Pollution Discharge Elimination System (NPDES) Stormwater General Permit. Implementing Best Management Practices (BMPs) aimed at ensuring proper pollution prevention and good housekeeping for municipal operations is one requirement (Part 2.3.7.b.iii) of the 2016 General Permit.

On June 23rd, July 2nd, and July 9th, EP staff performed facility audits at sixteen (16) municipal facilities and ten (10) parks and recreation areas owned and operated by the Town of Milford.

The municipal buildings visited include:

- Animal Control
- Asylum St Storage Area
- Brookside Elementary School
- Highway Department
- Library
- Memorial Elementary School
- Milford Fire Department Headquarters
- Milford High School
- Milford Housing Authority
- Milford Police Department
- Milford Wastewater Treatment Facility
- Milford Senior Center
- Stacy Middle School
- Town Hall
- Transfer Station

- Woodland Elementary School
- Youth Center

The parks and recreation areas visited include:

- Casey Memorial Swimming Pool
- Draper Memorial Park
- Fino Field & Annex, Fino Field Pool, Votolato Field, and Upper Charles River Trail Parking
- Louisa Lake Recreational Area and Upper Charles River Trail Parking
- Milford Hopkinton Charles River Trail Parking
- Plains Park, Rosenfeld Field, and Inglesi Field
- Prospect Height Park
- Tomaso Park
- Town Park
- Vernon Field

The audit process included touring the buildings and grounds of each property, observing accessible areas, reviewing available documents, and interviewing available facility contacts. Observations related to pollution prevention and good housekeeping, stormwater management, areas of erosion, water ponding, impervious surfaces, storage containers, and stockpile areas were documented in writing, in mobile data collection forms, and by photograph.

Due to COVID-19 restrictions, EP was unable to thoroughly observe the interiors of the facilities. The garages and sheds at the Highway Department, Fire Station, Milford Housing Authority, and Wastewater Treatment Plant were the only interior spaces thoroughly audited.

The municipal facilities audited in the Town of Milford are generally in compliance with respect to the Pollution Prevention and Good Housekeeping minimum control measure of the Stormwater General Permit. EP has provided recommendations for potential facility improvements to manage stormwater runoff from the facilities described in this report.

A table summarizing our findings from the audits is provided in Appendix A. The table lists the facilities where audits were performed and, where applicable, identifies instances of non-conformance with the goals of the Stormwater General Permit. Recommendations for corrective action are also provided for instances of non-conformance. Photographs for many of the identified instances of non-conformance or potential upgrades are shown in Appendix B.

During site visits, stormwater assets (catch basins, drain manholes, MS4 outfalls, outlets, inlets, and drain pipes) were observed. Facilities for which there were unmapped stormwater assets found during the site visits are noted in Appendix A.

Corrective actions taken in response to the report should be documented in writing by the facility managers of the individual facilities, with a copy forwarded to you at the Engineering Division to be kept on file with other NPDES Stormwater Permit compliance documentation.

We very much appreciate working with the Town of Milford on this project. Should you have any questions or require additional information, please do not hesitate to us.

Sincerely,

Environmental Partners Group, Inc.
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Principal / Senior Project Manager
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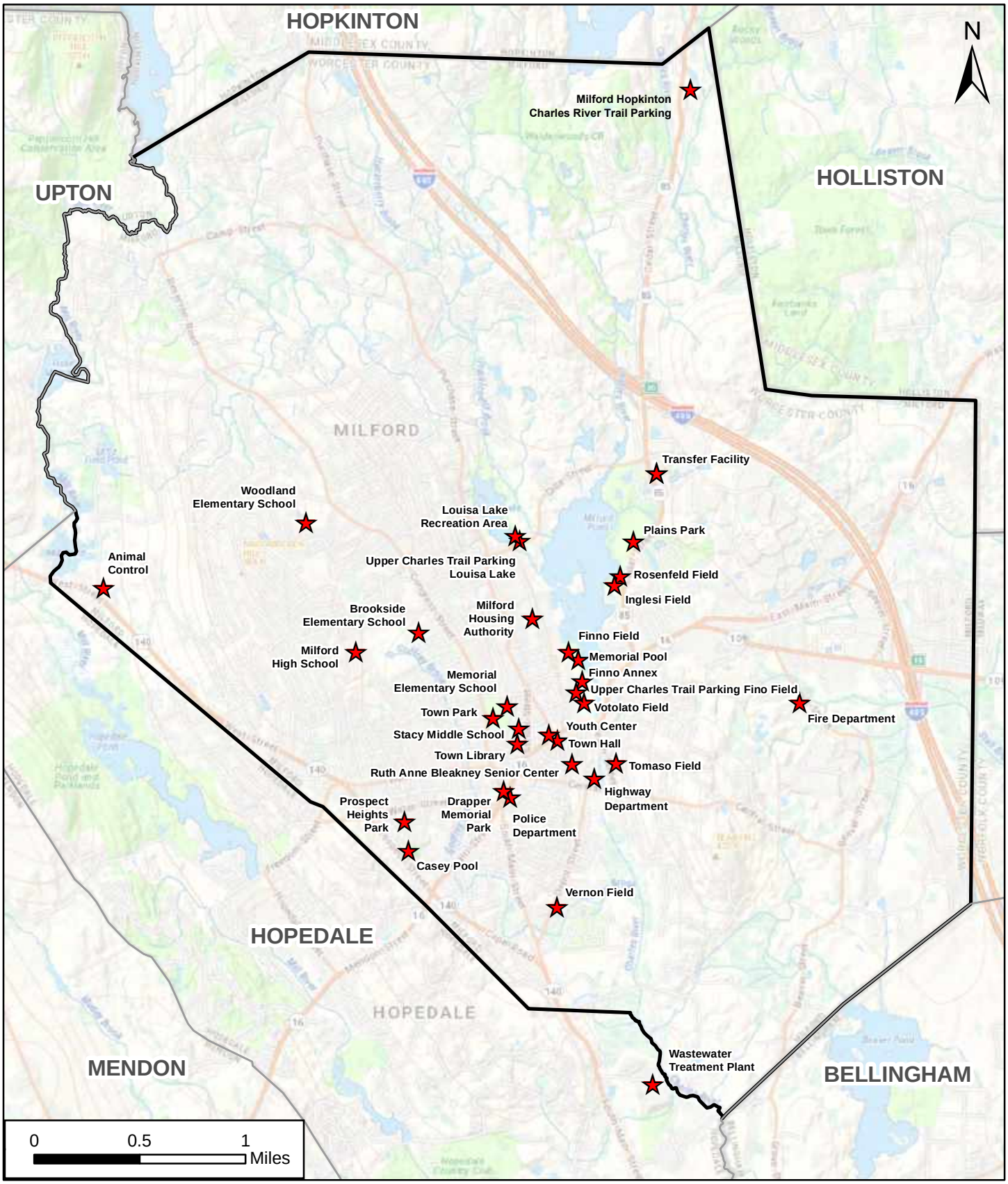
James Asam, Parks and Recreation Administrator
Scott Turner, Environmental Partners
Bill Watts, Environmental Partners

Figures: 1. Municipal Facility Audit Map

Appendices: A. Municipal Facility Audit Summary
B. PDF Reports with Photo Documentation

Figure 1:

Municipal Facility Audit Map



ENVIRONMENTAL PARTNERS

Figure 1
Municipal Facility Audit Map
Milford, Massachusetts

I:\Milford.311\FY20 Stormwater\Facility Audits\Figures\MXDs\Figure 1 - Municipal Facility Audit Map.mxd

Appendix A:

Municipal Facility Audit Summary

ENVIRONMENTAL PARTNERS

Town of Milford, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (June 19, July 2, and July 9, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Animal Control	3 Fiske Mill Rd	Animal Control	N/A	N/A	N/A
Asylum Street Storage Area	Asylum St	DPW Storage	Dumpsters uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Maintain stockpiles of street sweepings and other materials consistent with MS4 permit requirements in order to reduce/eliminate sediment from eroding into stormwater management systems and/or wetlands.	N/A
Brookside Elementary School	110 Congress St	School	Dumpsters uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Consider developing a long-term storage location for plastic turf infill materials currently stored near the generator that eliminates potential entry of materials into the stormwater system and/or wetlands. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Casey Memorial Pool	41 Prospect St	Community Pool	N/A	N/A	N/A
Draper Memorial Park	238 Main St	Park	N/A	N/A	N/A
Fino Field & Annex, Votolato Field, Fino Field Pool, and Upper Charles River Trail Parking	Granite St	Park	N/A	Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Fire Department Headquarters	21 Birch St	Fire Station	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Consider utilizing a flammables storage locker for motor oil and other flammables.
Highway Department	30 Front St	DPW	Sand piles uncovered.	Maintain stockpiles of street sweepings and other materials consistent with MS4 permit requirements in order to reduce/eliminate sediment from eroding into stormwater management systems and/or wetlands. Consider implementing a regular cleaning schedule for the wash bay floor drain to avoid overflow of wash water in to nearby wetlands and river. Unclog garage floor drain. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Organize solvents, oils, greases, and other chemicals and store neatly based on chemical compatibility. Gas cans/flammables should be stored in flammables storage lockers. Consider purchasing additional flammables storage lockers as needed.
Louisa Lake and Upper Charles River Trail Parking	24 Dilla St	Park	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

ENVIRONMENTAL PARTNERS

Town of Milford, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (June 19, July 2, and July 9, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Memorial Elementary School	12 Walnut St	School	Dumpsters uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Milford High School	31 W Fountain St	School	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Milford Hopkinton Charles River Trail Parking	467 Cedar St	Park	N/A	N/A	If not already doing so, encourage residents to refrain from dumping waste in woods near parking lot, including lawn and refuse bags.
Milford Housing Authority	45 Birmingham Ct	Housing Authority	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Verify that gasoline and other flammables are stored in accordance with EPA requirements and DEP guidelines (guidelines attached as Appendix C). Consider purchasing additional flammables storage lockers to store all gas/oil/aerosol containers in maintenance garage.
Milford Town Library	80 Spruce St	Library	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Verify that gasoline and other flammables are stored in accordance with EPA requirements and DEP guidelines (guidelines attached as Appendix C). Consider purchasing flammables storage lockers for maintenance shed.
Plains Park, Rosenfeld Field, and Inglesi Field	90 Cedar St	Park	N/A	Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Police Department	250 Main St	Police Station	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Prospect Heights Park	36 Prospect Heights Park	Park	N/A	N/A	N/A
Senior Center	60 North Bow St	Council On Aging	Dumpsters uncovered. Stockpiles of brush and soil uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Ensure stockpiles are stored in accordance with MS4 permit requirements in order or reduce/eliminate stored salt from entering stormwater management systems. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

ENVIRONMENTAL PARTNERS

Town of Milford, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (June 19, July 2, and July 9, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Stacy Middle School	66 School St	School	N/A	Ensure salt storage in yellow container in front of school is stored in accordance with MS4 permit requirements in order or reduce/eliminate stored salt from entering stormwater management systems. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Tomaso Park	41 Beach St	Park	N/A	N/A	N/A
Town Hall	52 Main St	Town Hall	N/A	N/A	N/A
Town Park	69 Congress St	Park	N/A	Minimize the use of fertilizers. Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	
Transfer Station	85 Cedar St	Transfer Station	Dumpsters uncovered. Batteries and refrigerators stored outside, uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Cover batteries and refrigerators. Organize the future transfer station on Asylum Street to reduce/eliminate sediment (sand piles) and sources of contamination (batteries, waste oil, equipment with coolant or fuel) from entering nearby woods and wetlands.	N/A
Vernon Field	Vernon St	Park	N/A	N/A	N/A
Wastewater Treatment Facility	226 S Main St, Hopedale, MA	Wastewater Treatment Plant	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Woodland Elementary School	10 N Vine St	School	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Ensure storage of green, blue, and black polymer bags near generator and transformer are stored in accordance with MS4 permit requirements.
Youth Center	24 Pearl St	Community Center	N/A	Previously unmapped stormwater assets (catch basins, manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

Appendix B:

PDF Reports and Photo Documentation

Animal Control , Animal Control

Created	2020-07-02 15:53:23 UTC by EPField 01
Updated	2020-07-02 16:01:43 UTC by EPField 01
Location	42.1610634135697, -71.5590100490578

General

Client	Milford
Date	2020-07-02
Time	11:53
Address	62–98 Fiske Mill Rd Milford, MA 01757
Facility Type	Animal Control
Facility Name	Animal Control

Inspection Information

Photos

Locked shed.

Septic field.

No floor drains in external animal cages.

DPW Storage, Asylum Street Storage Area

Created	2020-06-23 12:57:12 UTC by EPField 01
Updated	2020-07-01 15:32:49 UTC by EPField 01
Location	42.1536786016469, -71.5551780816834

General

Client	Milford
Date	2020-06-23
Time	08:57
Address	3 Fiske Mill Rd Milford, MA 01757
Facility Type	DPW Storage
Facility Name	Asylum St Storage Area

Inspection Information

Photos

Brush pile.

Composting operation.

Site of future transfer station.

Composting operation.

School, Brookside Elementary School

Created	2020-06-23 18:51:53 UTC by EPField 01
Updated	2020-06-23 19:05:35 UTC by EPField 01
Location	42.1500019217303, -71.5299071465354

General

Client	Milford
Date	2020-06-23
Time	14:51
Address	110 Congress St Milford, MA 01757
Facility Type	School
Facility Name	Brookside Elementary School

Inspection Information

Photos

Unmapped stormwater assets.

Riprap stormwater channel.


DRAIN
SIGMA

Salt storage.


DRAIN

Oil/water separator manhole.

Stormwater treatment area.

Outlet.


DRAIN

Park, Casey Memorial Pool

Created	2020-06-23 15:15:58 UTC by EPField 01
Updated	2020-06-23 15:21:23 UTC by EPField 01
Location	42.1344190918954, -71.530728507701

General

Client	Milford
Date	2020-06-23
Time	11:15
Address	43 Prospect St Milford, MA 01757
Facility Type	Park
Facility Name	Casey Pool

Inspection Information

Photos

Paved channel.

Locked fence.

Dumpster covered.

Park, Draper Park

Created	2020-06-23 14:43:33 UTC by EPField 01
Updated	2020-07-01 16:13:02 UTC by EPField 01
Location	42.1391974809041, -71.5211711079548

General

Client	Milford
Date	2020-06-23
Time	10:43
Address	238 Main St Milford, MA 01757
Facility Type	Park
Facility Name	Draper Park

Inspection Information

Photos

Park, Fino Field & Annex, Votolato Field, Fino Field Pool, and Upper Charles River Trail Parking

Created	2020-06-23 16:20:27 UTC by EPField 01
Updated	2020-06-23 16:42:01 UTC by EPField 01
Location	42.1460100403448, -71.5151635464947

General

Client	Milford
Date	2020-06-23
Time	12:20
Address	62–66 Granite St Milford, MA 01757
Facility Type	Park
Facility Name	Fino field & annex, memorial pool, votolato Park and upper Charles trail parking

Inspection Information

Photos

Locked field.

Covered dumpsters.


FINO FIELD
IS A
NON-SMOKING
FACILITY
NO DOGS
ALLOWED
PER MILFORD TOWN BY-LAW
ARTICLE 15A, SEC. 3

Dumpster uncovered.

Locked shed.

Unmapped inlets.

Unidentified structure in Fino Field Pool.


DRAIN


TRASH

Fire Station, Milford Fire Department

Created	2020-07-02 14:21:55 UTC by EPField 01
Updated	2020-07-02 14:45:31 UTC by EPField 01
Location	42.1452238597368, -71.4940600097845

General

Client	Milford
Date	2020-07-02
Time	10:21
Address	21 Birch St Milford, MA 01757
Facility Type	Fire Station
Facility Name	Milford Fire Department

Inspection Information

Photos

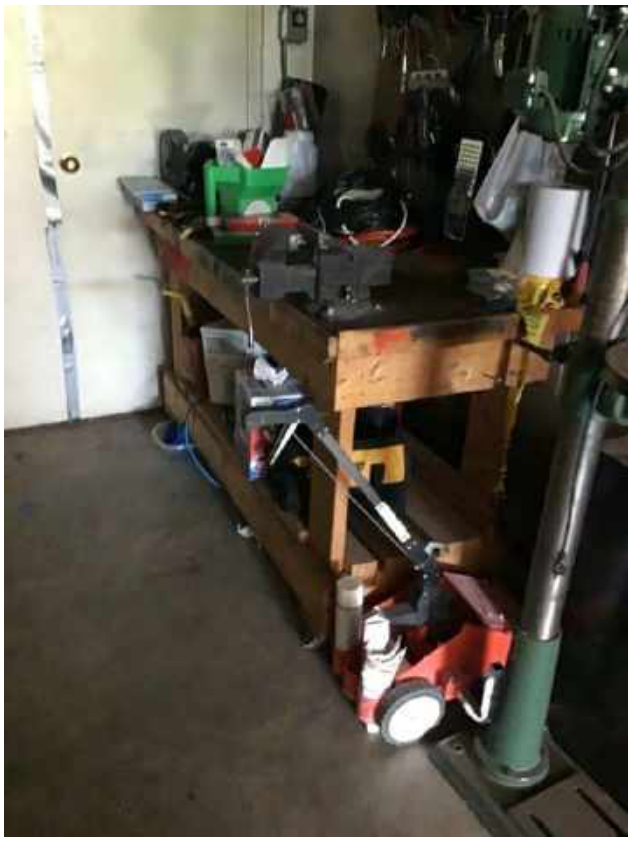
Valve access.

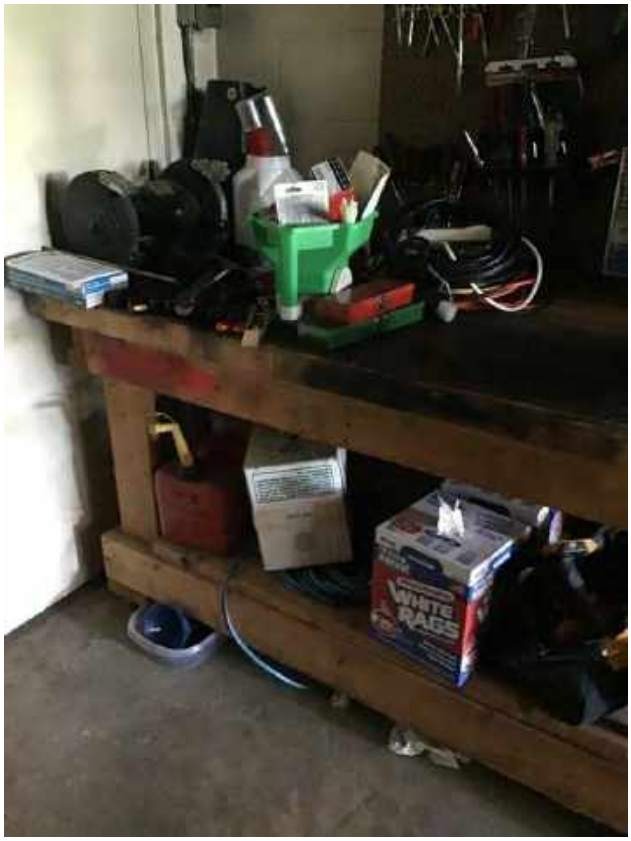
Fueling station with underground 4000 gallon diesel and 1000 gallon unleaded fuel tanks; spill kit nearby.

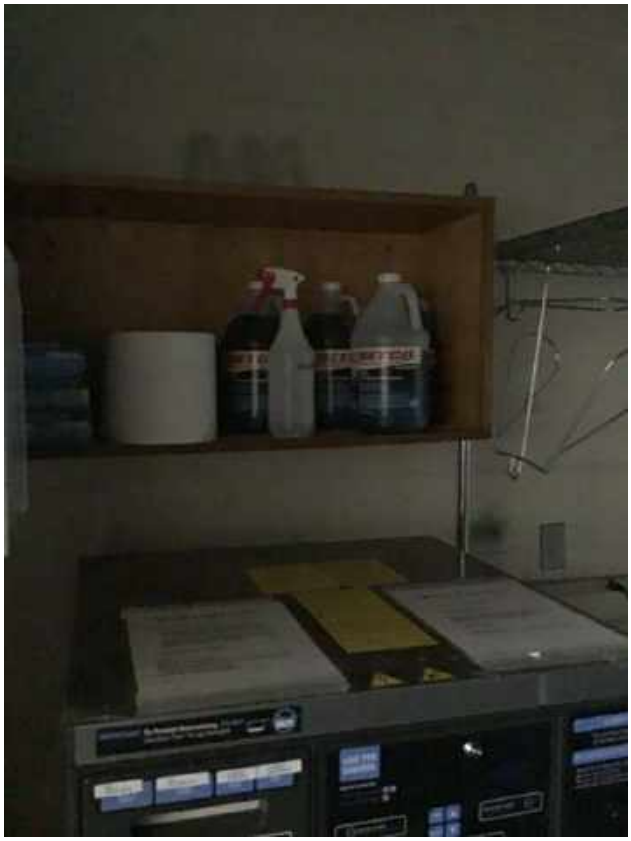
Fuel station underground storage tanks.

Unmapped stormwater assets.

Garage floor drain. Location of vehicle washing.




WHITE
RAGS




8695
E-1


CAUTION

Motor oil storage.

Stormwater site plans.

Retired waste oil release chamber.

School, Milford High School

Created	2020-07-02 16:55:49 UTC by EPField 01
Updated	2020-07-08 13:58:34 UTC by EPField 01
Location	42.1498405281847, -71.5350609273385

General

Client	Milford
Date	2020-07-02
Time	12:55
Address	31 W Fountain St Milford, MA 01757
Facility Type	School
Facility Name	Milford High School

Inspection Information

Photos

Unmapped stormwater assets.


MILFORD PUBLIC SCHOOLS
ADMINISTRATION BUILDING

Stormwater management area.


DRAIN


TRASH
harvey


harvey
1-800-321-3002

Generator.


DRAIN


DRAIN


DRAIN


DRAIN


ESS
0005S


NO WASTE
DRAINS TO STREAM


CLEAN


DRAIN


DRAIN

Proprietary sperator.

Sewer piped to turf field.


DRAIN


DRAIN

Turf field bathrooms.

Storage shed.

Roof drain discharges to grass on this section of the High School.

DPW, Highway Department

Created	2020-06-23 12:08:54 UTC by EPField 01
Updated	2020-07-01 15:23:01 UTC by EPField 01
Location	42.140045645686, -71.5138389543365

General

Client	Milford
Date	2020-06-23
Time	08:08
Address	1 Front St Milford, MA 01757
Facility Type	DPW
Facility Name	Highway Department

Inspection Information

Photos

De-icing fluids.

Sand and dirt storage, uncovered.

Bathroom floor drain.

Chemical/oil storage room.

Garage floor drain.

Fueling station.

Separator manhole to collect oils, etc.

Vehicle wash bay with floor drain.

Catch basin to outlet to new riprap/vegetated stormwater bio-retention area.

Clogged garage drain.

Soil for residential pick-up.

Housing Authority , Milford Housing Authority

Created	2020-07-02 15:05:31 UTC by EPField 01
Updated	2020-07-02 15:31:08 UTC by EPField 01
Location	42.1511648269763, -71.5202549659382

General

Client	Milford
Date	2020-07-02
Time	11:05
Address	87–199 Birmingham Ct Milford, MA 01757
Facility Type	Housing Authority
Facility Name	Milford Housing Authority

Inspection Information

Photos

Storage for flammable materials.

Electric hot water tank and air compressor.


ARIENS


eXmark
TURF TRACER


AMES

De-iceing materials.


casella

Unmapped stormwater assets.


casella

Park, Louisa Lake Recreational Area and Upper Charles River Parking

Created	2020-06-23 17:44:46 UTC by EPField 01
Updated	2020-06-23 17:53:28 UTC by EPField 01
Location	42.1561883355909, -71.5197989864132

General

Client	Milford
Date	2020-06-23
Time	13:44
Address	20–24 Dilla St Milford, MA 01757
Facility Type	Park
Facility Name	Louisa Lake Recreational Area and Upper Charles River Parking

Inspection Information

Photos

School, Memorial Elementary School

Created	2020-06-23 18:15:35 UTC by EPField 01
Updated	2020-06-23 18:37:02 UTC by EPField 01
Location	42.1451685391759, -71.5217756946306

General

Client	Milford
Date	2020-06-23
Time	14:15
Address	12 Walnut St Milford, MA 01757
Facility Type	School
Facility Name	Memorial Elementary School

Inspection Information

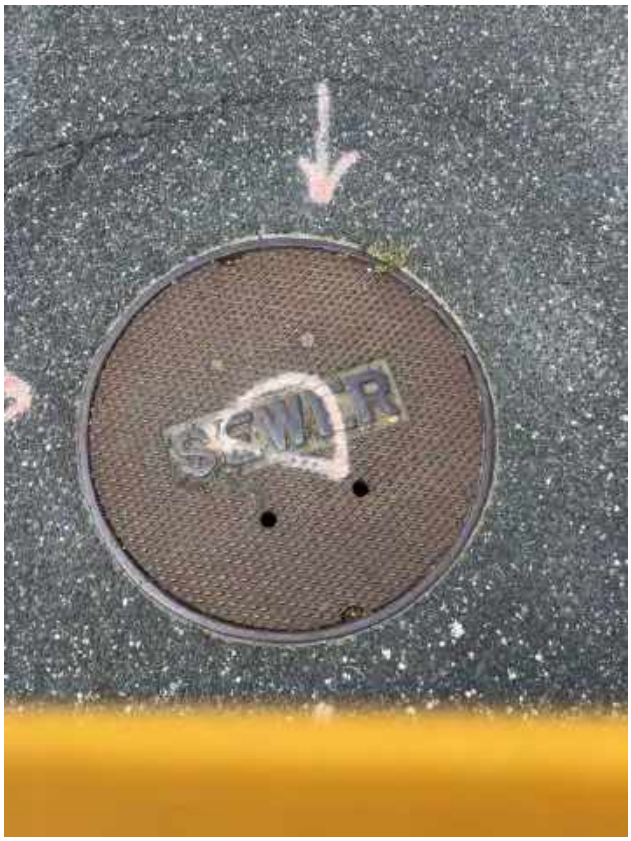
Photos

Air conditioning condenser behind fence.

Riprap covered incline.


harvey
1-800-321-3002

Catch basin in need of cleaning.


SEWER

Park, Milford Hopkinton Upper Charles River Trail Parking

Created	2020-07-09 12:49:23 UTC by EPField 01
Updated	2020-07-09 13:11:25 UTC by EPField 01
Location	42.1882359244035, -71.5048327669501

General

Client	Milford
Date	2020-07-09
Time	08:49
Address	467–479 Cedar St Milford, MA 01757
Facility Type	Park
Facility Name	Milford Hopkinton Upper Charles River Trail Parking

Inspection Information

Photos

4 compostable lawn and refuse bags in vegetated area to be removed.

Carry-in carry-out trash policy. Litter scattered around parking lot.

Oil stains on pavement.

Evidence of erosion, likely caused by water flowing down gradient from Cedar Street to parking lot entrance.


STOP

Park, Plains Park, Rosenfeld Field, and Inglesi Field

Created	2020-06-23 16:51:06 UTC by EPField 01
Updated	2020-06-23 17:36:04 UTC by EPField 01
Location	42.1560320305099, -71.5098403674285

General

Client	Milford
Date	2020-06-23
Time	12:51
Address	Cedar St Milford, MA 01757
Facility Type	Park
Facility Name	Plains Park, Rosenfeld Field, and Inglesi Field

Inspection Information

Photos

Closed dumpsters.

One of multiple detention ponds on property that were required to be installed.
Property used to be a Town of Milford trash dump.

Detention pond adjacent to Milford Pond.

Rosenfeld Park Boat Ramp.

Police Station, Milford Police Department

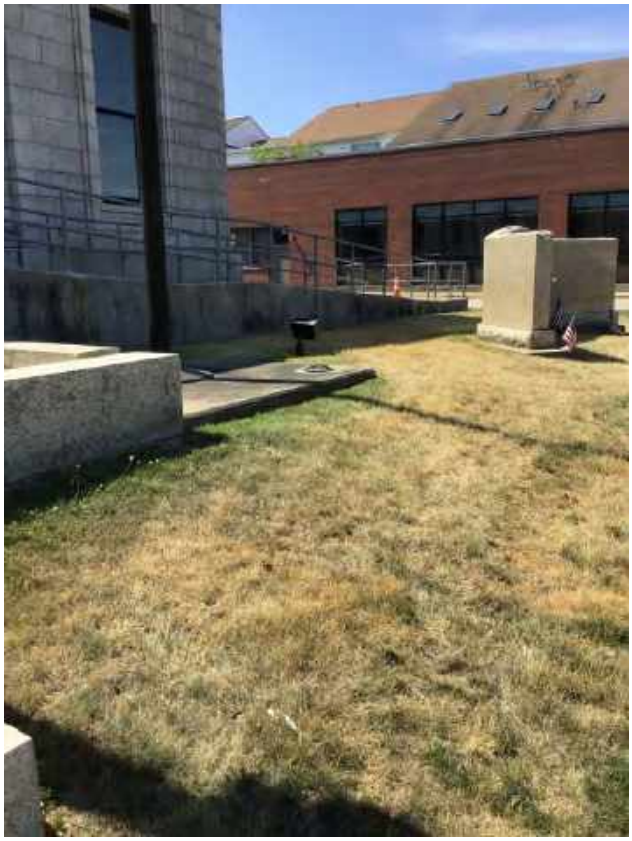
Created	2020-06-23 14:31:01 UTC by EPField 01
Updated	2020-06-23 14:42:22 UTC by EPField 01
Location	42.1388820698877, -71.5211861115615

General

Client	Milford
Date	2020-06-23
Time	10:31
Address	246 Main St Milford, MA 01757
Facility Type	Police Station
Facility Name	Milford Police Department

Inspection Information

Photos



Unlabeled manhole.

Equipment storage garage.

Unmapped stormwater assets.

Dumpster covered.

Electrical transformer.

Park, Prospect Heights Park

Created	2020-06-23 15:08:36 UTC by EPField 01
Updated	2020-06-23 15:12:53 UTC by EPField 01
Location	42.1376501203899, -71.5314518255326

General

Client	Milford
Date	2020-06-23
Time	11:08
Address	53–60 Prospect Heights Milford, MA 01757
Facility Type	Park
Facility Name	Prospect Height Park

Inspection Information

Photos

Unlabeled manhole.

Lights for memorial.

Council on Aging, Senior Center

Created	2020-07-02 13:44:43 UTC by EPField 01
Updated	2020-07-02 14:08:06 UTC by EPField 01
Location	42.140062155263, -71.5158233234758

General

Client	Milford
Date	2020-07-02
Time	09:44
Address	61 Jefferson St Milford, MA 01757
Facility Type	Council on Aging
Facility Name	Senior Center

Inspection Information

Photos

Unmapped stormwater assets.


DRAIN

Monitoring well.

Air conditioning condensors.

Brush and soil piles.

Uncovered dumpster.


ON
SIEMENS
OFF

Fertilizer and herbicide storage.

Catch basin in need of cleaning.

Vault door.

AVR Telescopic Post Indicator.

School, Stacy Middle School

Created	2020-06-23 18:37:03 UTC by EPField 01
Updated	2020-06-23 18:51:48 UTC by EPField 01
Location	42.1430544136485, -71.5204423852931

General

Client	Milford
Date	2020-06-23
Time	14:37
Address	66 School St Milford, MA 01757
Facility Type	School
Facility Name	Stacy Middle School

Inspection Information

Photos

Salt storage under cover. Salt may be leaking from container.


harvey

Unmapped stormwater assets.


DRAIN


DRAIN


DRAIN


DRAIN


DURHAM

Park, Tomaso Park

Created	2020-06-23 15:59:55 UTC by EPField 01
Updated	2020-06-23 16:20:26 UTC by EPField 01
Location	42.1409946513297, -71.5115999059381

General

Client	Milford
Date	2020-06-23
Time	11:59
Address	Milford, MA 01757
Facility Type	Park
Facility Name	Tomaso Park

Inspection Information

Photos

New policy of carry-in/carry-out. Parks Department removed outdoor trash receptacles.

Unlabeled manhole.

Town Hall , Town Hall

Created	2020-07-02 12:29:11 UTC by EPField 01
Updated	2020-07-02 12:52:08 UTC by EPField 01
Location	42.1428022569019, -71.5168952914074

General

Client	Milford
Date	2020-07-02
Time	08:29
Address	52 Main St Milford, MA 01757
Facility Type	Town Hall
Facility Name	Town Hall

Inspection Information

Photos


harvest

Abandoned gasoline spill containment underground tank.

National Grid transformer on left; Condenser on right.

Abandoned gasoline spill containment underground tank.

Evidence of roof drain erosion.

Library, Milford Town Library

Created	2020-07-02 13:21:15 UTC by EPField 01
Updated	2020-07-02 13:35:37 UTC by EPField 01
Location	42.1421144361033, -71.5192411853651

General

Client	Milford
Date	2020-07-02
Time	09:21
Address	127 Main St Milford, MA 01757
Facility Type	Library
Facility Name	Library

Inspection Information

Photos

Condenser locked in fenced-in area.

Storage shed for lawn mower, leaf blower, snow blower, gasoline, etc.


MILFORD
TOWN
LIBRARY

Unidentified structure.

Park, Town Park

Created	2020-06-23 18:00:11 UTC by EPField 01
Updated	2020-06-23 18:14:21 UTC by EPField 01
Location	42.1428034147528, -71.5207144362666

General

Client	Milford
Date	2020-06-23
Time	14:00
Address	88 Spruce St Milford, MA 01757
Facility Type	Park
Facility Name	Town Park

Inspection Information

Photos

Unmapped drainage.

Transfer Station, Transfer Station

Created	2020-06-23 12:35:15 UTC by EPField 01
Updated	2020-06-23 12:42:56 UTC by EPField 01
Location	42.1611014893671, -71.5079302993338

General

Client	Milford
Date	2020-06-23
Time	08:35
Address	97 Cedar St Milford, MA 01757
Facility Type	Transfer Station
Facility Name	Transfer Station

Inspection Information

Photos

Refrigerators uncovered.

Waste oil collection.

Battery storage, uncovered.

Dumpster uncovered.

Park, Vernon Field

Created	2020-06-23 15:28:28 UTC by EPField 01
Updated	2020-06-23 15:30:12 UTC by EPField 01
Location	42.1314326115345, -71.5164209996085

General

Client	Milford
Date	2020-06-23
Time	11:28
Address	Vernon St Milford, MA 01757
Facility Type	Park
Facility Name	Vernon Field

Inspection Information

Photos

Wastewater Treatment Plant, Milford Wastewater Treatment Plant

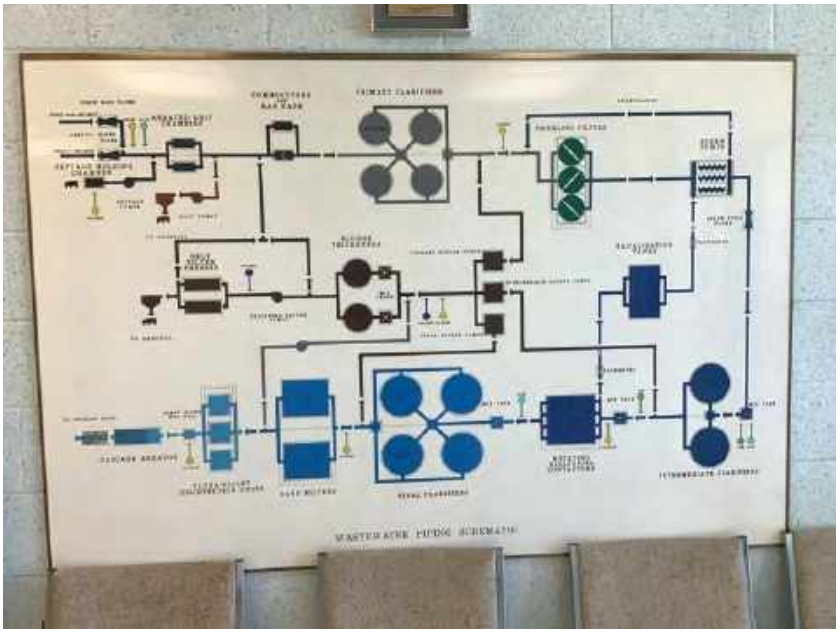
Created	2020-06-23 13:19:33 UTC by EPField 01
Updated	2020-07-01 16:07:18 UTC by EPField 01
Location	42.1269226381497, -71.5182914840749

General

Client	Milford
Date	2020-06-23
Time	09:19
Address	137 Cape Rd Milford, MA 01757
Facility Type	Wastewater Treatment Plant
Facility Name	Milford Wastewater Treatment Plant

Inspection Information

Photos

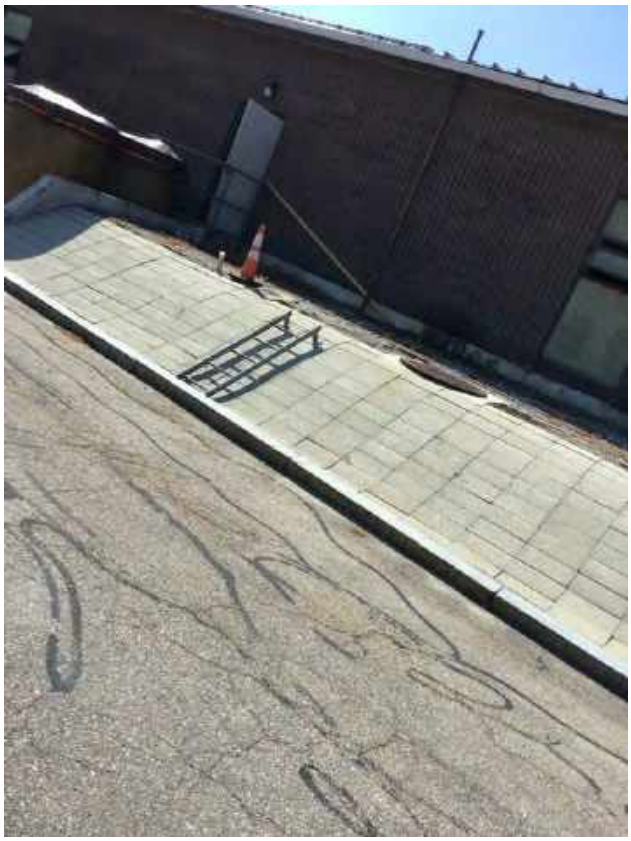



RIGHT TO KNOW
COMPLIANCE
CENTER
MATERIAL
INFILTRATE STORMWATER

Indoor floor drain next to oil/chemical drums on containment pallet.

Drums of miscellaneous hazardous materials on containment pallets.


KATOLIGHT



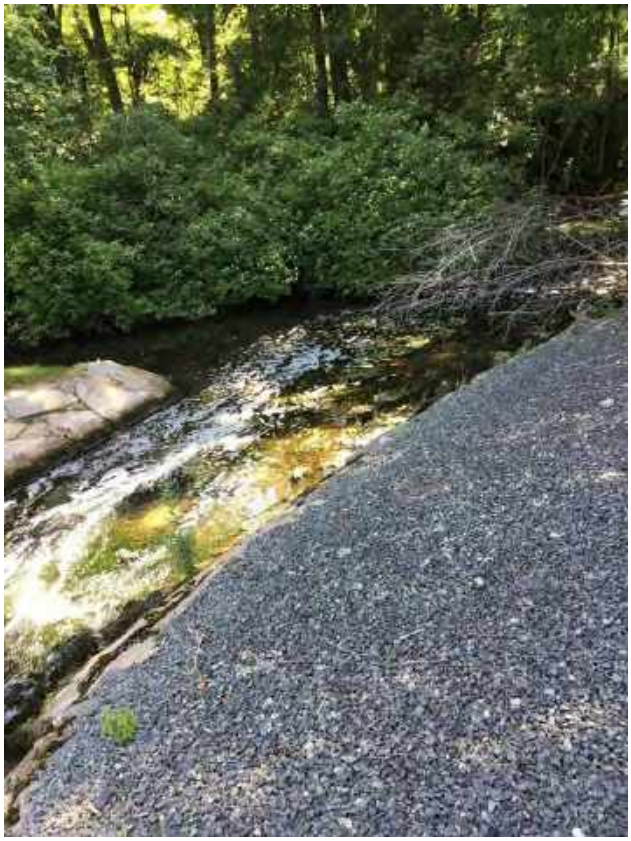

DRAIN


DRAIN


DRAIN


DRAIN


DRAIN



Discharge location to Charles River from property's stormwater drainage system and treatment plant cleaned discharge water.


DRAIN


DRAIN

Unmapped stormwater assets.

Vehicle wash bay with floor drain discharging to treatment plant.


DRAIN


DRAIN


DRAIN


DRAIN


DRAIN


DRAIN

School, Woodland Elementary School

Created	2020-07-02 16:12:06 UTC by EPField 01
Updated	2020-07-02 17:22:37 UTC by EPField 01
Location	42.1587024210414, -71.5387128387313

General

Client	Milford
Date	2020-07-02
Time	12:12
Address	10 N Vine St Milford, MA 01757
Facility Type	School
Facility Name	Woodland Elementary School

Inspection Information

Photos

Stormwater management area.

Unmapped stormwater assets.

Proprietary seperator.


CONTECH

Pond.


DRAIN

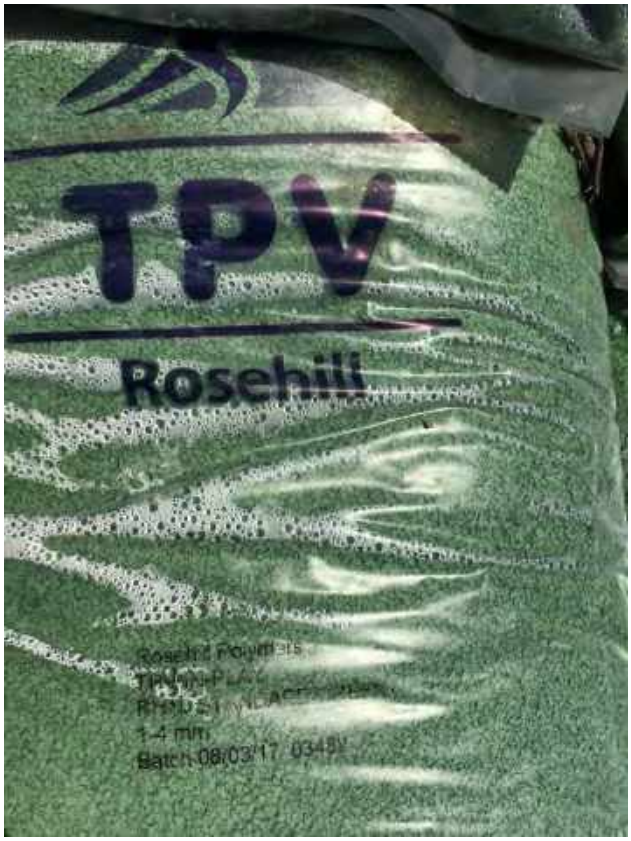
Vegetation along building.

Rainwater harvesting system.

Gas generator.

Storage of turf field infill materials made from polymers.

Empty drums.



Bag of green polymers for turf field.

Transformer.

Riprap sholder around road.


GREASE


GREASE

Stormwater management area.

Stormwater management area.


DRAIN

Riprap bordering field.

Community Center, Youth Center

Created	2020-07-02 13:02:08 UTC by EPField 01
Updated	2020-07-02 13:14:13 UTC by EPField 01
Location	42.1433140011897, -71.5172923822622

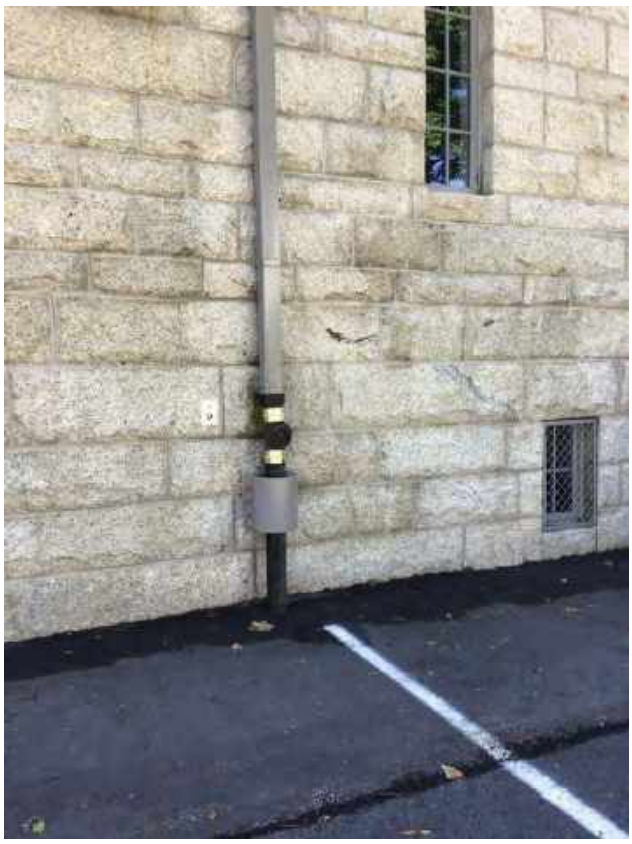
General

Client	Milford
Date	2020-07-02
Time	09:02
Address	24 Pearl St Milford, MA 01757
Facility Type	Community Center
Facility Name	Youth Center

Inspection Information

Photos

Air source heat pump.




harvey

Transformer.

Gas generator.


DRAIN
INDIA

Appendix C:

A Summary of Requirements for Small Quantity Generators of Hazardous Waste

A SUMMARY OF REQUIREMENTS

FOR

SMALL QUANTITY GENERATORS

OF HAZARDOUS WASTE

Updated July 2014

Prepared by:
Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Business Compliance Division
1 Winter Street
Boston, MA 02108
www.mass.gov/dep/

INTRODUCTION

Many essential services, including auto repair and dry-cleaners and institutions, such as schools and hospitals, produce hazardous waste. If you use cleaning solvents, oil, inks, paints, acids, or alkalines, for example, you may be a generator of hazardous waste.

As a generator, it is your responsibility to know your legal obligations under the Massachusetts Hazardous Waste Regulations. Inappropriate handling and disposal of hazardous waste has damaged water supplies and threatened human health. Increasingly, businesses find that meeting the legal requirements is good practice that protects the environment, the equity in their property and their neighbors and employees.

Under the "Superfund" law, you are liable for your hazardous waste and any damage it causes even after it leaves your site and is taken away by a transporter to a treatment, storage or disposal facility. You can be required to contribute to the costs of cleaning up any contamination, resulting from your wastes wherever they end up. It is important, therefore, that you determine how to prevent pollution before it begins.

The cost of waste disposal and liability coverage is escalating. Landfilling of many hazardous wastes is now banned. There are few commercial hazardous waste disposal facilities and their capacity is limited.

Reducing the amount of your hazardous waste may be the most economical and environmentally sound approach to meeting your requirements. Substituting non-hazardous for hazardous products, modifying your process, segregating non-hazardous from hazardous waste streams, recycling your waste and better housekeeping should be key considerations for you.

The Massachusetts Department of Environmental Protection (DEP) regulates all non-households (businesses and institutions) which generate any amount of hazardous waste. Radioactive wastes, unless mixed with hazardous waste, and infectious wastes are regulated by the Massachusetts Department of Public Health as well as by federal agencies.

This brochure is a summary of a portion of the Massachusetts Hazardous Waste Regulations and is organized as follows:

Classification
Paperwork
Housekeeping
Very Small Quantity Generators

It is designed to help you understand the regulations and will assist you in meeting your legal obligation and avoiding potential penalties. However, it is not a substitute for reading and complying with the full Hazardous Waste Regulations 310 CMR 30.000.

Because Massachusetts requirements are more stringent than the federal requirements, you will be in compliance with federal hazardous waste regulations when you meet the state standards.

The complete regulations are available at cost at the State House Bookstores. You can have them sent to you by calling Boston's bookstore (617) 727-2834, or (413) 784-1376 in Springfield. Ask for the most recent compilation of 310 CMR 30.000.

For a specific fact sheet for your industry, which will provide more detailed information, call the Hazardous Waste Regulatory Program's Compliance Assistance Line at (617) 292-5898.

CLASSIFICATION

Determine whether your waste is hazardous (310 CMR 30.100)

Common hazardous wastes are:

- waste oil
- solvents and thinners
- acids and bases/alkalines
- toxic or flammable paint wastes
- nitrates, perchlorates and peroxides
- abandoned or used pesticides
- some wastewater treatment sludges

There are two ways a waste may be identified as hazardous: it may be **listed** in the regulations (310 CMR 30.131-136) or it may be defined by its hazardous **characteristic** (310 CMR 30.120).

Hazardous waste may be a listed discarded chemical, an off-specification product, or a liquid or solid residue from an operation process, which has one or more of the characteristics below:

* **Ignitable** (easily catches fire, flash point 140 F);

* **Corrosive** (easily corrodes materials or human tissue, very acidic or alkaline, pH of ≤ 2 or ≥ 12.5);

* **Reactive** (explosive, produces toxic gases when mixed with water or acid);

* **Toxic** (can leach toxic chemicals as determined by a special laboratory test).

Your waste is considered **acutely hazardous** if it is on the list of acutely hazardous wastes (310 CMR 30.136). These wastes are extremely toxic or reactive and are regulated more strictly than other hazardous wastes.

To find out if your waste is hazardous check with:

* the supplier of the product (request a material safety data sheet);
* laboratories;
* trade associations;
* consulting engineers;

and verify by reviewing the Massachusetts Hazardous Waste Regulations.

Determine your generator status and regulatory requirements

Two activities determine your generator category: the *rate* at which you generate and *how much* you store (accumulate). The amount and length of time you can accumulate your wastes will vary according to the type of waste.

A **Large Quantity Generator (LQG)** generates more than 1,000 kilograms (2200 lbs.) of hazardous waste in a month, or more than l kilogram of acutely hazardous waste (acutely hazardous waste is listed in the Massachusetts regulations, 310 CMR 30.136). The waste must be shipped within 90 days. There is no limit to the amount which can be accumulated.

A **Small Quantity Generator (SQG)** generates less than l,000 kilograms in a month, and/or less than 1 kilogram of acutely hazardous waste. The waste must be shipped within 180 days and accumulation is limited to 6000 kilograms in tanks and containers.

A **Very Small Quantity Generator (VSQG)** generates less than l00 kilograms in a month, generates no acutely hazardous waste, and accumulates no more than 1,000 kilograms at any time.

To understand how you are regulated, estimate your maximum monthly volume of waste oil and your maximum monthly volume of all other hazardous waste. The Guide to Determining Status and Regulatory Requirements on page 5 will assist you.

Example:

Your firm generates 55 gallons of spent solvent and 500 gallons of waste oil in a month. According to the Guide (see conversions), you are a Small Quantity Generator (SQG) of hazardous waste because you generate more than 100 kilograms but less than 1000 kilograms, and a Large Quantity Generator (LQG) of waste oil because you generate more than l000 kilograms. Your regulatory status will be found on the fifth line [SQG/LQG].

Reading across, you may accumulate your solvent for as long as 180 days, or until you have reached a volume of 6000 kilograms (1500 gallons) (see page 10), whichever happens first. You must ship your waste oil every 90 days, regardless of the volume. You must obtain an EPA Identification Number and use a manifest for both wastes. You must manage your waste according to the accumulation area standards on page 8 and you must fulfill the emergency preparation and response requirements on page 11. You are not required to file an annual report or a contingency plan or provide full personnel training, which is necessary for large generators of hazardous waste.

This matrix does not reflect ACUTELY Hazardous waste

	Regulatory Status		Hazardous Waste Management Accumulation Limits		Waste Oil Management Accumulation Limits		Transport Requirements		Management Requirements		
	Hazardous Waste	Waste Oil	Time (Days)	Volume in Tanks and Containers (kg)	Time (Days)	Volume in Tanks and Containers (kg)	Must Use Manifest	May Self Transport Haz Waste and/or Waste Oil	Accumulation Area Standards	Emergency Preparation	Personnel Training & Contingency Plans & Biennial Rpt
NOTIFICATION TO EPA	LQG	LQG	90	NO LIMIT	90	NO LIMIT	YES		YES		YES
	LQG	SQG	90	NO LIMIT	180	6000	YES		YES		YES
	LQG	VSQG	90	NO LIMIT	NO LIMIT	1000	YES*	YES(WO)	YES		YES
	LQG	NONE	90	NO LIMIT	N/A	N/A	YES		YES		YES
	SQG	LQG	180	6000	90	NO LIMIT	YES		YES	YES	
	SQG	SQG	180	6000	180	6000	YES		YES	YES	
	SQG	VSQG	180	6000	NO LIMIT	1000	YES*	YES(WO)	YES	YES	
	SQG	NONE	180	6000	N/A	N/A	YES		YES	YES	
	VSQG	LQG	NO LIMIT	1000	90	NO LIMIT	YES*	YES(HW)	YES	YES	
	NONE	LQG	N/A	N/A	90	NO LIMIT	YES		YES	YES	
TO DEP	VSQG	SQG	NO LIMIT	1000	180	6000	YES*	YES(HW)	YES	YES	
	VSQG	VSQG	NO LIMIT	1000	NO LIMIT	1000	YES*	YES	YES		
	VSQG	NONE	NO LIMIT	1000	N/A	N/A	YES*	YES	YES		
	NONE	SQG	N/A	N/A	180	6000	YES		YES	YES	
	NONE	VSQG	N/A	N/A	NO LIMIT	1000	YES*	YES	YES		

* - A manifest must be used for the VSQG category unless self transported.

Definitions:

Regulatory Status	Kilograms/ Month (Generation)
LQG	1000 OR MORE
SQG	100-999
VSQG	LESS THAN 100

Conversions::

Kilograms	Pounds	Gallons (varies by substance)
100	220	25-27
1000	2200	250-270
6000	13200	1500-1620

PAPERWORK

The Manifest (310 CMR 30.310)

As a generator you always retain responsibility for your hazardous waste. If your waste is dumped or disposed of improperly, you can be held responsible. It is therefore important that you know where your waste is going and that it is handled properly and safely.

Federal law (the Resource Conservation and Recovery Act of l976, known as RCRA) requires a national 'cradle to grave' tracking system for hazardous waste. In Massachusetts, every shipment of hazardous waste by a large or small generator must be transported by a licensed hauler and sent to a licensed treatment, storage or disposal facility (TSDF) or a permitted recycling facility and must be accompanied by a shipping document, called the Uniform Hazardous Waste Manifest.

You are responsible for completing the generator portion of the manifest. Directions for the distribution of the copies are on the back of the manifest. A copy will be returned to you when the facility has accepted your shipment.

If you do not receive a copy of the manifest from the receiving facility within 35 days of the date when your waste was shipped, you should contact your transporter or the operator of the facility to determine the status of your waste. If you have still not received the manifest within 45 days, you must file an Exception Report, explaining the efforts you've taken, with the DEP's Business Compliance Division and with the state where the designated facility is located.

If you are shipping hazardous waste directly to an out-of-state designated facility, you must submit a photocopy of Copy 3 to the Department within 30 days of receiving your copy from the designated facility.

Note the generator's certification statement on your manifest, which you must sign:

> *"If I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford."*

All generators must keep copies of all manifests, any records of tests and analyses done of their hazardous waste, and records of waste determinations (including any determinations that their wastes are not hazardous) for at least three years, and for the duration of any enforcement action.

The EPA Identification Number (EPA ID) (310 CMR 30.303)

As a Small Quantity Generator of Hazardous Waste, to have your waste accepted by a licensed hauler or treatment/storage facility, you will need to obtain a federal Identification Number. The Environmental Protection Agency (EPA) will assign a 12-digit number, such as **MAR999999999**, which is unique for your location. Enter this number in Block **1** on each manifest.

In order to get an EPA ID, call DEP (617-338-2255 or 1-800-462-0444, outside the 617 area code) or go to http://www.mass.gov/dep/bwp/dhm/files/hwepaid.pdf for an application. Mail the completed application to the office listed in the instructions. Your number will be mailed to you within a few months. While you are waiting for your ID, you can use a temporary ID beginning with the letters MP, followed by your 10-digit telephone number.

The ID number is site-specific. You are required to notify the Bureau of Waste Prevention in your DEP Regional office of any change in your address, name of company, contact person or generator status. (See listing of towns by DEP Region on the back page.)

Shipping Your Hazardous Waste (310 CMR 30.304, 30.305)

All hazardous waste must be transported in containers that are labeled with the words HAZARDOUS WASTE, the name of the waste, type of hazard (e.g., toxic, flammable), generator's name, address and EPA ID number. Refer to the container standards described on page 8.

A list of licensed transporters is now available on DEP's Website at www.mass.gov/dep/ under the Bureau of Waste Prevention: you may also call DEP at (617) 292-55576. Transporters may assist you in preparing your waste for shipment.

Annual Compliance Assurance Fee (310 CMR 4.03)

All Small Quantity Generators of hazardous waste[•] are billed an annual compliance fee of $645 to cover costs of the services provided by the Department. These services include, but are not limited to, notification processing, compliance inspection, compliance assistance hot line, and information services.

As a Small Quantity Generator of hazardous waste you must notify the Department if you intend to cancel or modify your registration in any way. *Any* changes to your generator status must be received by the Department before July 1 to change your annual compliance fee for the upcoming fiscal year.

[•] Small Quantity Generators of waste oil only are not subject to the fee.

HOUSEKEEPING

Accumulation Area Standards (310 CMR 30.351[8])

Your accumulation or storage area must meet the following conditions for both containers and tanks. (**VSQG** indicates VSQG's are also required to meet the standard.)

VSQG • Above-ground tanks and containers must be on a surface which does not have any cracks or gaps and is impervious to the hazardous wastes being stored and on pallets if containers are stacked;

VSQG • Area must be secured against unauthorized entry;

VSQG • Area must be clearly marked (e.g., by a visible line or tape, or by a fence) and be separate from any points of generation;

VSQG • Area must be posted with a sign: "HAZARDOUS WASTE" in capital letters at least one inch high;

VSQG • An **outdoor** area must have secondary containment, such as a berm or dike, which will hold any spill or leaks at:
- 10% of the total volume of the containers, or
- 110% of the volume of the largest container, whichever is larger.

Any spillage must be promptly removed.

(In general, if the hazardous waste being stored has no free liquids, no pad or berm is required, provided that the accumulation area is sloped, or the containers are elevated.)

Standards for Containers and Tanks [310 CMR 30.341(2), 30.680, 30.690]

VSQG • Each container and tank must be clearly and visibly labeled throughout the period of accumulation with the following:
- the words "HAZARDOUS WASTE:
- the name of the waste (e.g., waste oil, acetone)
- the type of hazard(s) (e.g., ignitable, toxic)

SQG ONLY - date on which accumulation began.

VSQG • Each container must be in good condition

VSQG • Wastes of different types must be segregated. This includes not mixing waste oil or used fuel oil with other wastes. Be careful not to put incompatible wastes in the same container or put wastes in unwashed containers that previously held incompatible wastes.

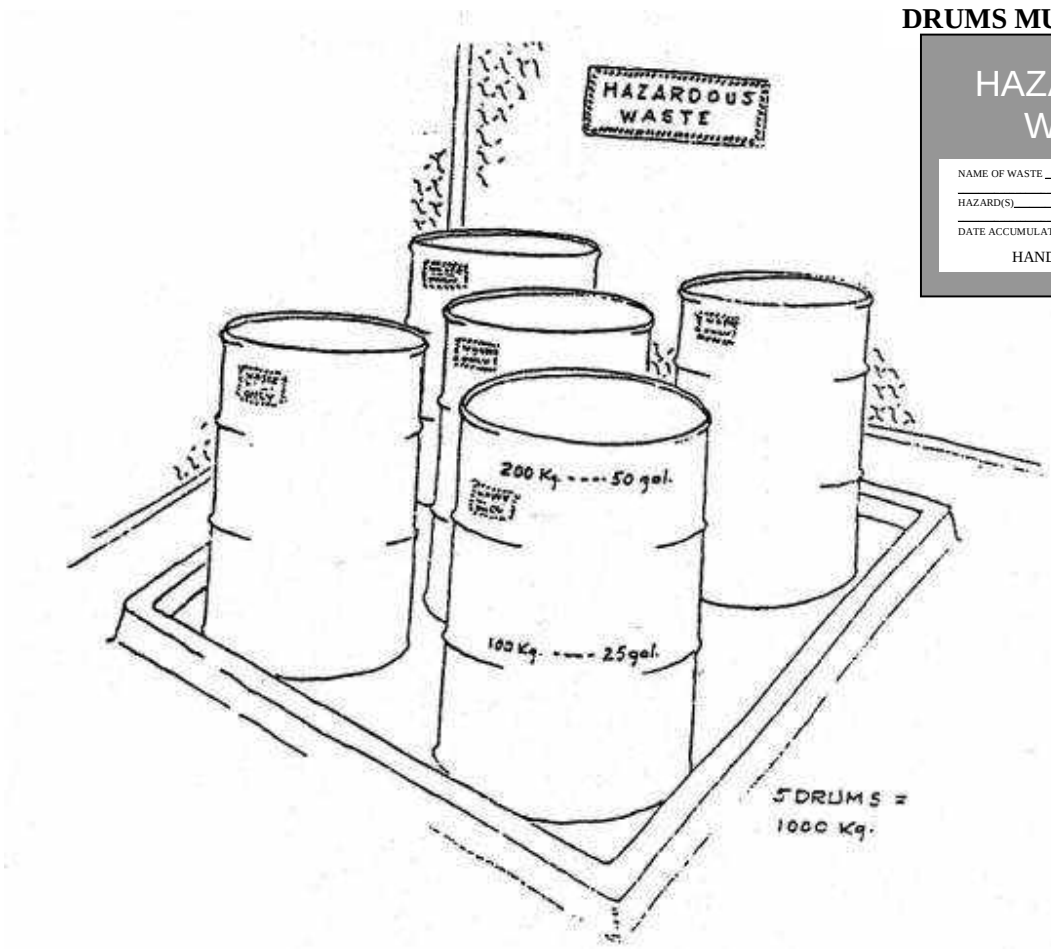
VSQG • Separate containers of incompatible wastes by a berm, dike, or similar structure.

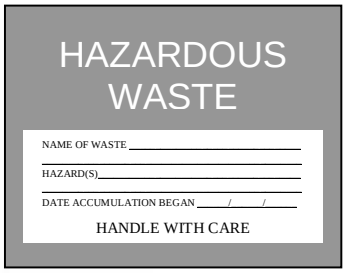
VSQG • Each container holding hazardous wastes must be tightly closed throughout the period of accumulation, except when the waste is being added or removed.

• Containers holding ignitable or reactive wastes must be at least 15 meters (50 ft.) from the property line. If this is not possible or practical, you must store such containers in compliance with all applicable local ordinances and by-laws.

• Inspect your accumulation area at least once a week for any leaking or deterioration of your containers. You must have enough aisle space between your containers to allow for inspections.

DRUMS MUST BE LABELED





Accumulation Time Limits (310 CMR 30.351[5])

As a small quantity generator (SQG), you may accumulate up to 6000 kgs (1500-1620 gallons) in containers and *tanks* for as long as 180 days. You have two upper limits - time and volume. Whichever is reached first determines the date on which you must ship your waste.

Satellite Accumulation (310 CMR 30.351[4])

Additional flexibility is offered by allowing you to accumulate up to 55 gallons of hazardous waste (per wastestream), or one quart of acutely hazardous waste, at each point where you generate your waste, if you meet the following conditions:

- The waste must be generated from a process at the location of the satellite accumulation;
- Each satellite accumulation area can have only one container for each waste stream in use at a time;
- Each satellite accumulation area must be managed by the person who is directly responsible for the process producing the waste;
- The waste must be moved to the main designated accumulation area within three days after the container is full.

Accumulation of Waste Oil in Underground Tanks (including those resting directly on the ground) [310 CMR 30.253(1)(g)]

All underground tanks must have tight caps, leak detection devices and cathodic protection with an overflow and spill prevention device by December 22, 1998.

- Tanks must have continuous leak detection capability through an in-tank monitoring device or be double-walled.
- Keep a log of all test results, beginning and ending measurements, variation and average figures, for at least 3 years.
- Report a difference of a month's average greater than 5 gallons (for tanks containing 550 gallons or less) to your DEP regional office.

EMERGENCY PREPARATION AND RESPONSE (310 CMR 30.351(9))

Equipment

To minimize the risk of fire, explosion, or release of hazardous wastes that may contaminate the environment, you are required to have on site, and immediately accessible to your hazardous waste handling area, the following (unless the hazards posed by your wastes do not require one of them):

* an alarm or communication system which can provide emergency instruction to employees;

* a telephone, two-way radio or other device which can summon police, fire or emergency response teams;

* portable fire extinguishers and/or fire control equipment (e.g. foam, inert gas), and spill control/decontamination equipment;

* adequate supply and pressure of water, automatic sprinklers or water sprays, or foam-producing equipment.

All your equipment must be periodically tested and properly maintained so it will work during an emergency.

Prepare Your Employees

You must thoroughly familiarize each of your employees with all the waste handling and emergency procedures that may be needed for each of their jobs. An employee must have immediate access to alarm or communication devices, either directly or through another employee, whenever hazardous waste is being handled. If your operation is at any time being handled by a single employee, that person must have immediate access to a telephone or two-way radio.

For easy movement of employees and emergency equipment, you must maintain adequate aisle space in the area of hazardous waste handling. Mark all exits clearly.

Notify Local Authorities

You must make every reasonable attempt to carry out the following arrangements, in regards to the waste you produce:

* Familiarize your police department, fire department, local boards of health, and any emergency response teams with the hazardous nature of your waste; the layout of your site, including entrances and evacuation routes, and the location where your employees usually work;

* Familiarize local hospitals with the hazards of your waste and the types of injuries that could result from any accidents;

* Obtain agreements with emergency response teams and contractors, and local boards of health;

* If more than one police and/or fire department might respond to an emergency, make an agreement with the department which will have primary emergency authority and specify others as support.

If such arrangements cannot be made, a copy of a signed and dated letter which demonstrates an effort to make these arrangements from you, the generator, to the state or local entity will be considered sufficient.

Emergency Coordinator

You must designate at least one employee to be on call (or on the premises) at all times. This person is the emergency coordinator and is responsible for coordinating all emergency response measures.

Emergency Response

You must have posted next to each telephone near your waste generation area the following:

* name(s) and telephone number(s) of your emergency coordinator(s);

* location(s) of the fire control equipment and any fire alarms;

* telephone number of the fire department, or if there is a direct alarm system, instructions on how to use it;

* evacuation routes, where applicable.

If any of the following emergencies occur:

Fire - attempt to extinguish the fire and/or call the fire department;

Spill or leak - contain the flow as quickly as possible and as soon as is practical, clean up the waste and any soil or other materials which may have become contaminated with waste;

A release (spill or leak) or threat of release, fire or explosion of hazardous waste that may threaten human health or the environment

- Call the appropriate DEP Regional Office (see page 17) and ask for Emergency Response, or the Central Boston office at (617) 556-1133 or (888) 304-1133.

<u>and</u>

- Call the National Response Center's 24-hour toll-free number (1-800-424-8802).

VERY SMALL QUANTITY GENERATOR (VSQG) (310 CMR 30.353)

Registration

If you generate less than 100 kgs a month of hazardous waste, and no acutely hazardous waste, you are eligible to register as a Very Small Quantity Generator (see page 5 for the generation and accumulation limits). To qualify as a Very Small Quantity Generator you must register with DEP (see page 16).

Housekeeping Requirements (see pages 8 and 9 for VSQG identified lines)

Treatment/Disposal Options

As a registered VSQG you have the following options for handling your waste:

You may recycle or treat your waste, provided the process you describe in your registration is acceptable to DEP;

You may transport your waste to another generator who is in compliance with the regulations and who will count your waste as part of their generation;

You may transport your waste in your own vehicle to a licensed treatment, storage or disposal facility, or permitted recycling facility, by pre-arrangement;

You may use a licensed transporter and a manifest form. Use of the manifest requires an ID number. (VSQG's and SQG's of waste oil use a number beginning with the letters MV followed by their 10-digit telephone number.)

Self-Transport Option

As a registered VSQG you may transport your own hazardous waste under the following conditions:

You transport only the waste that you generated on your premises;

You do not transport more than 200 kgs at one time;

VSQG (cont.)

Your waste is in containers that are:

- no larger than 55 gallons in volume
- compatible with the waste
- tightly sealed
- labeled as "HAZARDOUS WASTE"
- labeled with the name of the waste and the type of hazard
- tightly secured to the vehicle

You do not transport incompatible wastes in the same shipment;

In the event of a spill or leak of hazardous waste that may threaten human health or the environment you notify DEP or the State Police and the National Response Center, as described on page 13;

You must have a copy of your registration with DEP in the vehicle;

You must be in compliance with federal Department of Transportation (617-494-2770) and Massachusetts Department of Public Safety (978-567-3300) requirements.

Record-keeping

If you are not using a licensed transporter but are transporting your own wastes, you do not need a manifest form. You must, however, keep a record of the type and quantity, as well as the date, of the transport and treatment or disposal of your waste. You will need proof of the receipt of the waste by the facility or generator.

You must keep receipts or manifests of waste shipped and records of waste analysis for at least 3 years, or for the duration of any enforcement action by DEP.

Accumulation Limits

You may accumulate up to 1000 kgs (approximately 270 gallons or five 55 gallon drums) of hazardous waste in containers that meet the standards on pages 8-9 with no time limit.

There is no annual compliance assurance fee for Very Small Quantity Generators.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES

Automotive Industry

5013 Auto parts/supplies
7512 Autobody shops
7549 Automotive repair services
5511 Car dealers, new & used
7542 Car washes
7699 Engine repair
5541 Gasoline service stations
7538 General auto & truck repair
4231 Motor freight terminals
371 Motor vehicles & equipment
5093 Scrap & waste dealers
4214 Trucking & storage

Construction, Building Trades

2951 Asphalt paving manufacture
1521 Building contractor (single family)
7349 Building maintenance
1751 Carpenter, cabinetmaker
1731 Electrical contractor
8711 Engineering, architecture
1749 Excavating contractor
1752 Floor laying
154 General contractor (non-residential)
162 Heavy construction contractor
1721 Painting, paper hanging
1611 Paving contractor
1711 Plumbing, heating
1761 Roofing
1442 Sand & gravel

Educational Institutions

8221 Colleges & universities
8211 Elementary & secondary schools
8412 Museums
8922 Non-commercial educational scientific & research organizations
8249 Vocational schools

Food Industry (Retail)

5461 Bakery products
5451 Dairy products

Machine shops/metal fabrication

3362 Brass, bronze & copper castings
3432 Brass goods/plumbing fixtures
3471 Electroplating, anodizing
3431 Enameled iron & metal ware
3499 Fabricated metal products
344 Fabricated structural metal
346 Forgings & stamping
3429 Hardware
3569 Heavy equipment
391 Jewelry silverware, plated ware
3544 Job shops, tool & die
355 Machinery
3412 Metal barrels, drums
3398 Metal heat treating
3451 Screw machine products
3444 Sheet metal work
333 Smelting – non-ferrous metals
334 7692 Welding

Manufacturing

362 Electric appliances (industrial)
2851 Paints, varnish
2621 Paper mills
2821 Plastics, liquid resins
367 Printed circuit boards, semiconductor
243 Wood products, mill work

Medical Services

8021 Dentists
8060 Hospitals
8071 Medical & X-ray laboratories
8011 Physicians
8731 Research laboratories
074 Veterinarians

Municipal Services

9224 Fire
9221 Police
9229 Public works
4953 Refuse, landfills

Other Services

7623 Air conditioning repair
764 Antiques repair
8999 Art restoration
7231 Beauty salons
4493 Boat yard
7699 Cesspool cleaning
7342 Disinfecting
7216 Dry cleaning
7641 Furniture stripping
078 Landscaping, horticultural
7389 Miscellaneous business services
5983 Motor oil retailer
7512 Paint shops
1611 Paving contractor
722 Photographers
4311 Postal, U.S.
5093 Scrap & waste dealers
4171 Transportation (bus)
448 Transportation (water)

Printing Industry

7334 Blueprinting, photocopying
2731 Book publishing
2754 Commercial gravure
2752 Lithographic printing
2711 Newspaper publishers
2721 Periodical publishers
2793 Photoengraving
7384 Photofinishing laboratories
226 Screenprinting

APPENDIX O

BMP Observation Reports

Stormwater Treatment Structure Inspection Report

Milford, MA

June 2019

Environmental Partners GROUP

A partnership for engineering solutions

Environmental Partners GROUP

A partnership for engineering solutions

Memorandum

Date 8/13/2019

To Michael Dean, P.E. – Town Engineer

From Natalie Pommersheim – EP

CC Scott Crisafulli – Milford Highway Surveyor
Robert Rafferty, P.E. - EP
Marissa Carvalho – EP

Subject **Stormwater Treatment Structure Inspections**

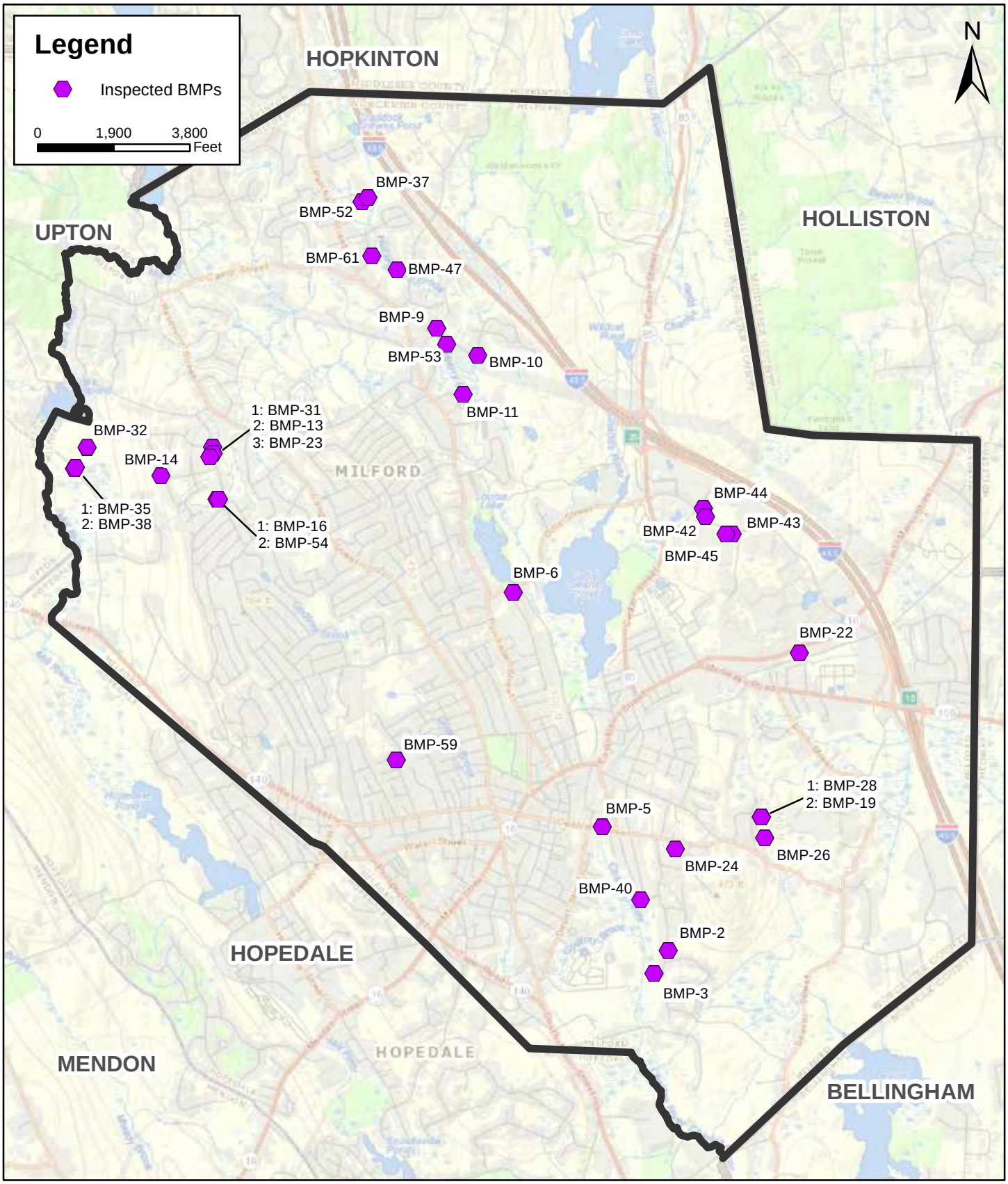
On April 13, 2016, the Environmental Protection Agency (EPA) released the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts, which became effective July 1, 2018. The Permit imposes a host of new requirements for the Town of Milford and all communities 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, Inc. (EP) completed observations on 32 of the Town's stormwater treatment structures (BMPs) to provide inventory and condition data, as shown on Figure 1, and summarized in Table 1. For the Town's reference, the BMP inspection data forms are enclosed and pictures of each BMP included.

According to the findings of these BMP site visits, conducted on June 17, 18, and 24, 2019, the following maintenance issues are present at the Town's BMPs:

- Invasive Species: BMP-24, BMP-31, BMP-52, BMP-54
- Soil Erosion: BMP-32
- Excess Vegetation: BMP-2, BMP-3, BMP-5, BMP-9, BMP-10, BMP-11, BMP-16, BMP-23, BMP-24, BMP-26, BMP-31, BMP-32, BMP-40, BMP-43, BMP-45, BMP-53, BMP-54, BMP-59
- Dead Vegetation: BMP-13, BMP-54, BMP-59
- Trash/Debris: BMP-6, BMP-61
- Excess Sediment: BMP-43, BMP-45
- Inlet/Outlet Condition: BMP-5, BMP-13, BMP-40, BMP-42, BMP-43, BMP-47
- Clogging: BMP-16, BMP-45, BMP-59

Enclosures:
Figure 1: Inspected BMP Locations
Table 1: Stormwater BMP Inspection Table
BMP Inspection Data Forms



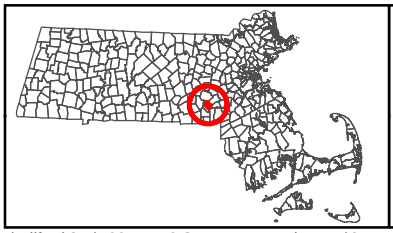


Figure 1: BMP Inspection Locations
Milford, Massachusetts

I:\Milford.311\1901 FY19 Stormwater Assistance\6. BMP Inspections\GIS\BMP Inspections Map Milford2.mxd

Table 1: Stormwater BMP Inspection Table

BMP ID	Date	Weather	Location	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-2	2019-06-17	Clear, Warm	Between the residence of 40 and 42 South Central Street	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-3	2019-06-17	Clear, Warm	West of 53 South Central Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-5	2019-06-24	Overcast, Rain	At Department of Public Works	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-6	2019-06-24	Overcast, Rain	At corner of Sumner and Dilla	Treatment BMP	Constructed Stormwater Wetland	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-9	2019-06-18	Overcast, Rain	On north/east side of Morey Way	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Not Applicable	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-10	2019-06-18	Overcast, Rain	South side of Eben Street	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-11	2019-06-18	Overcast, Rain	Behind 7 Dynasty Drive and 3 Celestial Circle	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-13	2019-06-24	Overcast, Rain	Goes alongside Highland Street, right after Gritte Lane	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-14	2019-06-24	Overcast, Rain	In between 19 and 21 Littlefield	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-16	2019-06-24	Overcast, Rain	South of the cul-de-sac	Structural Pretreatment BMP	Sediment Forebay	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Unsatisfactory	Satisfactory
BMP-19	2019-06-17	Clear, Warm	Along #13 Silva's driveway	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-22	2019-06-18	Overcast, Rain	Between Community Pediatrics and Prezo Grille & Bar	Unknown	Unknown	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-23	2019-06-24	Overcast, Rain	South of 181 Highland Street's driveway	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-24	2019-06-17	Clear, Warm	Behind houses on Moschilli Circle	Treatment BMP	Constructed Stormwater Wetland	Regular	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-26	2019-06-17	Clear, Warm	Behind #5 Silva Street	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-28	2019-06-17	Clear, Warm	Along #13 Silva's driveway	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-31	2019-06-24	Overcast, Rain	South of 183 Highland Street's driveway	Conveyance BMP	Drainage Channel	Regular	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory
BMP-32	2019-06-24	Overcast, Rain	South of Field Pond Road	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Unsatisfactory	Unsatisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-35	2019-06-24	Overcast, Rain	Near intersection between Fiske Mill and Field Pond Roads	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory

Table 1: Stormwater BMP Inspection Table

BMP ID	Date	Weather	Location	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-37	2019-06-18	Overcast, Rain	South of the cul-de-sac	Structural Pretreatment BMP	Sediment Forebay	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-38	2019-06-24	Overcast, Rain	Near the intersection of Field Pond and Fiske Mill Roads	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-40	2019-06-17	Clear, Warm	Behind (west) #91 E Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-42	2019-06-18	Overcast, Rain	North side of Fortune Blvd	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-43	2019-06-18	Overcast, Rain	At entrance to 179 Fortune Blvd	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-44	2019-06-18	Overcast, Rain	Behind 200 Fortune Blvd	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-45	2019-06-18	Overcast, Rain	Near entrance to Nitto Denko Avecia	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Unsatisfactory	Satisfactory
BMP-47	2019-06-18	Overcast, Rain	Between 4 and 2 Julie Circle	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-52	2019-06-18	Overcast, Rain	Behind #5 Farmer Circle	Treatment BMP	Wet Basin	Regular	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-53	2019-06-18	Overcast, Rain	Near corner of Eben Street and Morey Way	Unknown	Unknown	Regular	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Satisfactory
BMP-54	2019-06-24	Overcast, Rain	South of the cul-de-sac	Treatment BMP	Wet Basin	Regular	Unsatisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-59	2019-06-24	Overcast, Rain	East side of Union Street	Treatment BMP	Constructed Stormwater Wetland	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Unsatisfactory	Satisfactory
BMP-61	2019-06-18	Overcast, Rain	Behind 8 Selma Circle	Infiltration BMP	Infiltration Basin	Regular	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory

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Town of Milford, BMP-2, Infiltration BMP

Created	2019-06-13 14:59:26 EDT by EPField 01
Updated	2019-08-08 11:49:21 EDT by Vern Lincoln
Location	42.1309143094, -71.5064429566
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	12:50
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-2
Location	Between the residence of 40 and 42 South Central Street
BMP Category	Infiltration BMP
BMP Type - Treatment	Detention pond
BMP Type - Infiltration	Infiltration Basin
Address	42 South Central St Milford, MA 01757
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

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	There appears to be an outlet structure

Photos

Town of Milford, BMP-3, Other BMP

Created	2019-06-13 18:59:26 UTC by EPField 01
Updated	2019-08-08 20:11:56 UTC by EPField 04
Location	42.1293076396, -71.5077738635
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	13:38
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-3
Location	West of 53 South Central Street
BMP Category	Other BMP
BMP Type - Treatment	detention basin
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	53 South Central St Milford, MA 01757
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	Excess 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?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

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	There appears to be a stormwater outlet

Photos

Town of Milford, BMP-5, Infiltration BMP

Created	2019-06-24 13:35:02 UTC by EPField 05
Updated	2019-08-01 13:17:44 UTC by EPField 04
Location	42.1393512688, -71.512533389
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	09:35
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-5
Location	At Department of Public Works
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	186 Central St Milford, MA 01757
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some excess vegetation in outlet and inlet
Corrective Action Needed	Clean out

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes

Photos

Town of Milford, BMP-6, Treatment BMP

Created	2019-06-24 16:46:10 UTC by EPField 05
Updated	2019-08-01 13:27:58 UTC by EPField 04
Location	42.1554292251, -71.5207245201
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	12:46
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-6
Location	At corner of Sumner and Dilla
BMP Category	Treatment BMP
BMP Type - Treatment	Constructed Stormwater Wetland
Address	55 Sumner St Milford, MA 01757
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?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash, reportedly cleaned out regularly
Corrective Action Needed	Remove Trash/Debris

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?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Minor trash in first pond from outfall
Photos	 


Constructing a Wetland to Clean Milford Water

Town of Milford, BMP-9, Infiltration BMP

Created	2019-06-13 18:59:27 UTC by EPField 01
Updated	2019-08-01 13:39:54 UTC by EPField 04
Location	42.1735228166, -71.5277630236
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	13:02
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-9
Location	On north/east side of Morey Way
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	1 Morey Way Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	N/A

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess vegetation preventing access
Corrective Action Needed	Mow/Rake/Prune

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes

Photos

Town of Milford, BMP-10, Infiltration BMP

Created	2019-06-13 18:59:27 UTC by EPField 01
Updated	2019-08-01 13:18:02 UTC by EPField 04
Location	42.1716611279, -71.523984321
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	12:45
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-10
Location	South side of Eben Street
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	25 Eben St Milford, MA 01757
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Unable to access overflow structures

Photos

Town of Milford, BMP-11, Infiltration BMP

Created	2019-06-13 18:59:27 UTC by EPField 01
Updated	2019-08-01 13:38:33 UTC by EPField 04
Location	42.1690002547, -71.5253717556
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	12:28
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-11
Location	Behind 7 Dynasty Drive and 3 Celestial Circle
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	3 Celestial Circle Milford, MA 01757
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

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	Slight erosion at outlet, see photo

Photos

Town of Milford, BMP-13, Conveyance BMP

Created	2019-06-13 18:59:27 UTC by EPField 01
Updated	2019-08-01 13:44:45 UTC by EPField 04
Location	42.1647095372, -71.5486796522
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	11:54
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-13
Location	Goes alongside Highland Street, right after Gritte Lane
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	194 Highland St Milford, MA 01757
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 pile
Corrective Action Needed	Remove/Replace

Trash/Debris

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	Dirt in outlet
Corrective Action Needed	Clean out

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
Photos	 

Town of Milford, BMP-14, Conveyance BMP

Created	2019-06-13 18:59:28 UTC by EPField 01
Updated	2019-08-01 13:34:33 UTC by EPField 04
Location	42.1633941541, -71.553158437
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	11:50
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-14
Location	In between 19 and 21 Littlefield
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	21 Littlefield Rd Milford, MA 01757
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?	Yes

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

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Photos	 

Town of Milford, BMP-16, Structural Pretreatment BMP

Created	2019-06-24 15:41:12 UTC by EPField 05
Updated	2019-08-01 13:43:17 UTC by EPField 04
Location	42.1618195999, -71.5478989854
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	11:41
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-16
BMP Category	Structural Pretreatment BMP
BMP Type - Structural Pretreatment	Sediment Forebay
Address	4 Diego Dr Milford, MA 01757
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

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?	No
BMP Issue Location/Amount	Standing water
Corrective Action Needed	Undetermined

Other Issues

Is Status of BMP Satisfactory?	Yes

Photos

Town of Milford, BMP-19, Other BMP

Created	2019-06-17 10:59:51 EDT by EPField 05
Updated	2019-08-08 11:41:04 EDT by Vern Lincoln
Location	42.1400356948, -71.4978345484
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	10:59
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-19
Location	Along #13 Silva's driveway
BMP Category	Other BMP
BMP Type - Treatment	Extended Dry Detention Basin
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	13 Silva St Milford, MA 01757
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?	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?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Cracking

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Overflow outlet from main stormwater discharge area
Photos	

Town of Milford, BMP-22, Unknown

Created	2019-06-13 18:59:29 UTC by EPField 01
Updated	2019-08-08 20:17:50 UTC by EPField 04
Location	42.1513028376, -71.4943838876
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	10:35
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-22
Location	Between Community Pediatrics and Prezo Grille & Bar
BMP Category	Unknown
Address	229 East Main St Milford, MA 01757
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?	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?	N/A

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Cracking

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	No structures mapped because BMP is off state road Standing water in area but it doesn't seem to be a problem

Photos

Town of Milford, BMP-23, Infiltration BMP

Created	2019-06-24 15:59:43 UTC by EPField 05
Updated	2019-08-08 20:11:37 UTC by EPField 04
Location	42.1649196137, -71.5483670309
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	11:59
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-23
Location	South of 181 Highland Street's driveway
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	181 Highland St Milford, MA 01757
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

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	This BMP contributes to a larger BMP/stormwater conveyance system

Photos

Town of Milford, BMP-24, Treatment BMP

Created	2019-06-13 18:59:29 UTC by EPField 01
Updated	2019-08-08 20:15:17 UTC by EPField 04
Location	42.1378186117, -71.505818075
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	11:50
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-24
Location	Behind houses on Moschilli Circle
BMP Category	Treatment BMP
BMP Type - Treatment	Constructed Stormwater Wetland
Address	3 Moschilli Circle Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Invasive plants, see photo
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

Dead 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

Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	There appears to be flowing water, which may just be a redirected stream.
Photos	

Town of Milford, BMP-26, Infiltration BMP

Created	2019-06-13 18:59:29 UTC by EPField 01
Updated	2019-08-01 13:36:09 UTC by EPField 04
Location	42.1386225677, -71.4975493609
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	11:06
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-26
Location	Behind #5 Silva Street
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	5 Silva St Milford, MA 01757
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	Excess vegetation throughout BMP
Corrective Action Needed	Mow/Rake/Prune

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes

Photos

Town of Milford, BMP-28, Infiltration BMP

Created	2019-06-13 18:59:29 UTC by EPField 01
Updated	2019-08-01 13:46:59 UTC by EPField 04
Location	42.1400555283, -71.4978809246
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	10:55
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-28
Location	Along #13 Silva's driveway
BMP Category	Infiltration BMP
BMP Type - Treatment	Constructed Stormwater Wetland
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	13 Silva St Milford, MA 01757
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?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Clearing where stormwater is directed

Photos

Town of Milford, BMP-31, Conveyance BMP

Created	2019-06-24 16:01:09 UTC by EPField 05
Updated	2019-08-08 20:12:28 UTC by EPField 04
Location	42.1653922817, -71.5484226868
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	12:01
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-31
Location	South of 183 Highland Street's driveway
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	183 Highland St Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Tall grass, potentially invasive
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	N/A

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Looks like a swale running through yards
Photos	

Town of Milford, BMP-32, Infiltration BMP

Created	2019-06-24 16:48:31 UTC by EPField 05
Updated	2019-08-01 13:34:54 UTC by EPField 04
Location	42.1653430767, -71.5599763021
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	12:48
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-32
Location	South of Field Pond Road
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	74 Field Pond Rd Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Soil Erosion

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Soil erosion along the edge by roadway, see pictures
Corrective Action Needed	Repair

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

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

Photos

Town of Milford, BMP-35, Conveyance BMP

Created	2019-06-24 16:46:39 UTC by EPField 05
Updated	2019-08-01 13:40:38 UTC by EPField 04
Location	42.1639881841, -71.5610320866
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	12:46
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-35
Location	Near intersection between Fiske Mill and Field Pond Roads
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	85 Fiske Mill Rd Milford, MA 01757
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?	Yes

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

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Photos	 

Town of Milford, BMP-37, Structural Pretreatment BMP

Created	2019-06-18 19:26:16 UTC by EPField 05
Updated	2019-08-01 13:45:50 UTC by EPField 04
Location	42.1821949259, -71.5346720909
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	15:26
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-37
Location	South of the cul-de-sac
BMP Category	Structural Pretreatment BMP
BMP Type - Structural Pretreatment	Sediment Forebay
Address	5 Farmer Cir Milford, MA 01757
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

Photos

Town of Milford, BMP-38, Conveyance BMP

Created	2019-06-24 16:44:17 UTC by EPField 05
Updated	2019-08-01 13:40:48 UTC by EPField 04
Location	42.163915866, -71.5611440688
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	12:44
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-38
Location	Near the intersection of Field Pond and Fiske Mill Roads
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	29 Fiske Mill Rd Milford, MA 01757
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?	Yes

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

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Photos	 

Town of Milford, BMP-40, Other BMP

Created	2019-06-13 18:59:26 UTC by EPField 01
Updated	2019-08-08 20:17:06 UTC by EPField 04
Location	42.1343936518, -71.5089801583
Status	Inspected
Client	Town of Milford
Date	2019-06-17
Time	12:18
Weather	Clear, Warm
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-40
Location	Behind (west) #91 E Street
BMP Category	Other BMP
BMP Type - Treatment	detention pond
BMP Type - Other	Dry Detention Basin
Address	91 E Street Ext Milford, MA 01757
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	Excess 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	Overgrown
Corrective Action Needed	Clear

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

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	Headwall outlet observed in overgrown detention basin

Photos

Town of Milford, BMP-42, Conveyance BMP

Created	2019-06-18 15:02:24 UTC by EPField 05
Updated	2019-08-01 13:36:38 UTC by EPField 04
Location	42.1606062935, -71.503017582
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	11:02
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-42
Location	North side of Fortune Blvd
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	200 Fortune Blvd Milford, MA 01757
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?	Yes

Trash/Debris

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	Leaves partially clogging outlet pipe
Corrective Action Needed	Clean out leaves

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	Assumed to be town owned
Photos	

Inlet swale

Inlet

Outlet swale

Inlet swale

Town of Milford, BMP-43, Conveyance BMP

Created	2019-06-18 15:15:49 UTC by EPField 05
Updated	2019-08-01 13:37:57 UTC by EPField 04
Location	42.159445351, -71.500550285
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	11:15
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-43
Location	At entrance to 179 Fortune Blvd
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	179 Fortune Blvd Milford, MA 01757
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	Vegetation growing in riprap
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Sediment clogging up riprap swale and culvert pipe
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Inlet and outlet clogged with leaves
Corrective Action Needed	Clear leaves

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

Photos

Inlet swale

Outlet

Outlet swale

Town of Milford, BMP-44, Treatment BMP

Created	2019-06-13 18:59:30 UTC by EPField 01
Updated	2019-08-01 13:38:04 UTC by EPField 04
Location	42.1611720569, -71.5032121184
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	10:46
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-44
Location	Behind 200 Fortune Blvd
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	200 Fortune Blvd Milford, MA 01757
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?	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?	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	Visited outlets during 2019 outfall inspections
Photos	 

Town of Milford, BMP-45, Treatment BMP

Created	2019-06-13 18:59:30 UTC by EPField 01
Updated	2019-08-01 13:37:47 UTC by EPField 04
Location	42.1594327573, -71.501140932
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	11:20
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-45
Location	Near entrance to Nitto Denko Avecia
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	179 Fortune Blvd Milford, MA 01757
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	Excess vegetation prevents maintenance
Corrective Action Needed	Mow/Rake/Prune

Dead 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?	No
BMP Issue Location/Amount	Rip-rap swale has excess sedimentation and vegetation growth
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Standing water, might be as designed
Corrective Action Needed	Unknown

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Rip-rap swale is inlet; no other inlets or outlets identified
Photos	  Inlet swale

Town of Milford, BMP-47, Treatment BMP

Created	2019-06-13 18:59:30 UTC by EPField 01
Updated	2019-08-01 13:40:26 UTC by EPField 04
Location	42.177534, -71.531427
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	14:15
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-47
Location	Between 4 and 2 Julie Circle
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	4 Julie Cir Milford, MA 01757
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?	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	Overflow outlet concrete headwall has fallen over
Corrective Action Needed	Fix headwall

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

Photos

Overflow inlet

Toppled overflow outlet headwall

Town of Milford, BMP-52, Treatment BMP

Created	2019-06-13 18:59:31 UTC by EPField 01
Updated	2019-08-01 13:39:43 UTC by EPField 04
Location	42.1824653536, -71.5341151133
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	15:22
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-52
Location	Behind #5 Farmer Circle
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	5 Farmer Circle Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Invasive species possibly present
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?	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?	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
Photos	 

Town of Milford, BMP-53, Unknown

Created	2019-06-13 18:59:31 UTC by EPField 01
Updated	2019-08-08 20:18:01 UTC by EPField 04
Location	42.1724239612, -71.5268868397
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	12:50
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-53
Location	Near corner of Eben Street and Morey Way
BMP Category	Unknown
Address	1 Morey Way Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	N/A

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes

Excess Salt

Is Status of BMP Satisfactory?	N/A

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Oil/Grease

Is Status of BMP Satisfactory?	N/A

Excess Sedimentation

Is Status of BMP Satisfactory?	N/A

Outlet Condition

Is Status of BMP Satisfactory?	N/A

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Cracking

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	N/A

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	BMP may enter into Huckleberry Brook. Unable to visually inspect inlets and outlets due to overgrowth
Photos	

Town of Milford, BMP-54, Treatment BMP

Created	2019-06-13 14:59:31 EDT by EPField 01
Updated	2019-08-08 11:31:20 EDT by Vern Lincoln
Location	42.1617789915, -71.548025021
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	11:37
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-54
Location	South of the cul-de-sac
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	4 Diego Dr Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Grass
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	Excess vegetation
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Dead grass
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

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

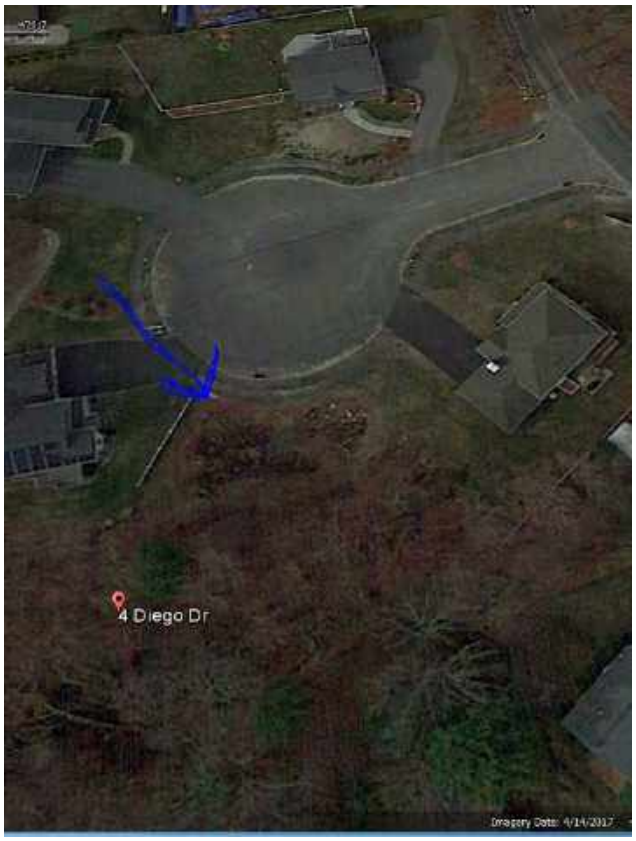
Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes

Photos



Google Earth aerial image from 2017

Town of Milford, BMP-59, Treatment BMP

Created	2019-06-13 18:59:31 UTC by EPField 01
Updated	2019-08-01 13:34:24 UTC by EPField 04
Location	42.1439228696, -71.5314929656
Status	Inspected
Client	Town of Milford
Date	2019-06-24
Time	10:38
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-59
Location	East side of Union Street
BMP Category	Treatment BMP
BMP Type - Treatment	Constructed Stormwater Wetland
BMP Type - Infiltration	Dry Well
Address	39 Union St Milford, MA 01757
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	Excess vegetation in parts, especially path to outlet
Corrective Action Needed	Mow/Rake/Prune; clear a path to outlet

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess dead vegetation around sides
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

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Standing water, maybe as designed
Corrective Action Needed	Check design

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Outlet to basin, likely for infiltration
Photos	 

Google Earth aerial image from 2017

Town of Milford, BMP-61, Infiltration BMP

Created	2019-06-13 18:59:32 UTC by EPField 01
Updated	2019-08-01 13:21:45 UTC by EPField 04
Location	42.1784806143, -71.533755346
Status	Inspected
Client	Town of Milford
Date	2019-06-18
Time	14:45
Weather	Rain, Overcast
Inspector	Stephen Gabriel

General Information

BMP ID	BMP-61
Location	Behind 8 Selma Circle
BMP Category	Infiltration BMP
BMP Type - Infiltration	Infiltration Basin
Address	8 Selma Cir Milford, MA 01757
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?	No
BMP Issue Location/Amount	Debris in basins
Corrective Action Needed	Remove Trash/Debris

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	Two basins connect and lead to overflow

Photos

Overflow outlet

Google Earth aerial image from 2008

ENVIRONMENTAL PARTNERS

July 14, 2021

Mr. Scott J. Crisafulli
Highway Surveyor
Milford Highway Department
30 Front Street
Milford, MA 01757

RE: NPDES Phase II Stormwater Assistance
Pollution Prevention & Good Housekeeping for Municipal Operations
Stormwater Treatment Structure Observations

Dear Mr. Crisafulli,

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 Milford 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 32 of the Town's stormwater treatment best management practices (BMPs) to provide inventory and condition data. The locations of all BMPs observed are shown on Figure 1 (attached), and the observation results are summarized in Table 1.

In summary, EP conducted BMP site visits on May 11, 2021, and identified the following maintenance issues:

ID	BMP Type	Maintenance Issues
BMP-2	Dry Detention Basin	Dead vegetation; trash/debris; overgrowth; fallen tree adjacent to headwall.
BMP-3	Dry Detention Basin	Overgrowth in rip-rap, some trash.
BMP-5	Dry Detention Basin	Overgrowth, particularly at outlet pipe; trash.
BMP-6	Constructed Stormwater Wetland	Slight overgrowth in rip-rap; some trash.
BMP-9	Dry Detention Basin	Significant overgrowth; standing water.

ID	BMP Type	Maintenance Issues
BMP-10	Dry Detention Basin	Slight overgrowth at outlet.
BMP-11	Dry Detention Basin	Dead vegetation; debris.
BMP-13	Infiltration Basin	Sediment buildup in outlet pipe.
BMP-24	Constructed Stormwater Wetland	Overgrowth.
BMP-26	Dry Detention Basin	Overgrowth.
BMP-28	Dry Detention Basin	Dead vegetation; overgrowth.
BMP-32	Dry Detention Basin	Overgrowth; some trash.
BMP-37	Dry Detention Basin	Some leaves and overgrowth.
BMP-40	Dry Detention Basin	Significant overgrowth; trash/debris.
BMP-42	Drainage Channel	Some leaves and trash in rip-rap.
BMP-43	Drainage Channel	Leaves in outlet and rip-rap.
BMP-45	Wet Basin	Some dead vegetation and trash.
BMP-47	Wet Basin	Dead vegetation and leaves; some trash; sedimentation buildup at inlet pipe across street.
BMP-53	Dry Detention Basin	Significant overgrowth; some dead vegetation.
BMP-54	Wet Basin	Dead vegetation, sediment, and trash in sediment forebay; dead vegation in wet basin.
BMP-59	Constructed Stormwater Wetland	Sediment; dead vegetation; trash.
BMP-61	Dry Detention Basin	Dead vegetation.

Completed BMP inspection data forms with photographs are also attached. We very much appreciate the opportunity to work with the Town of Milford 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

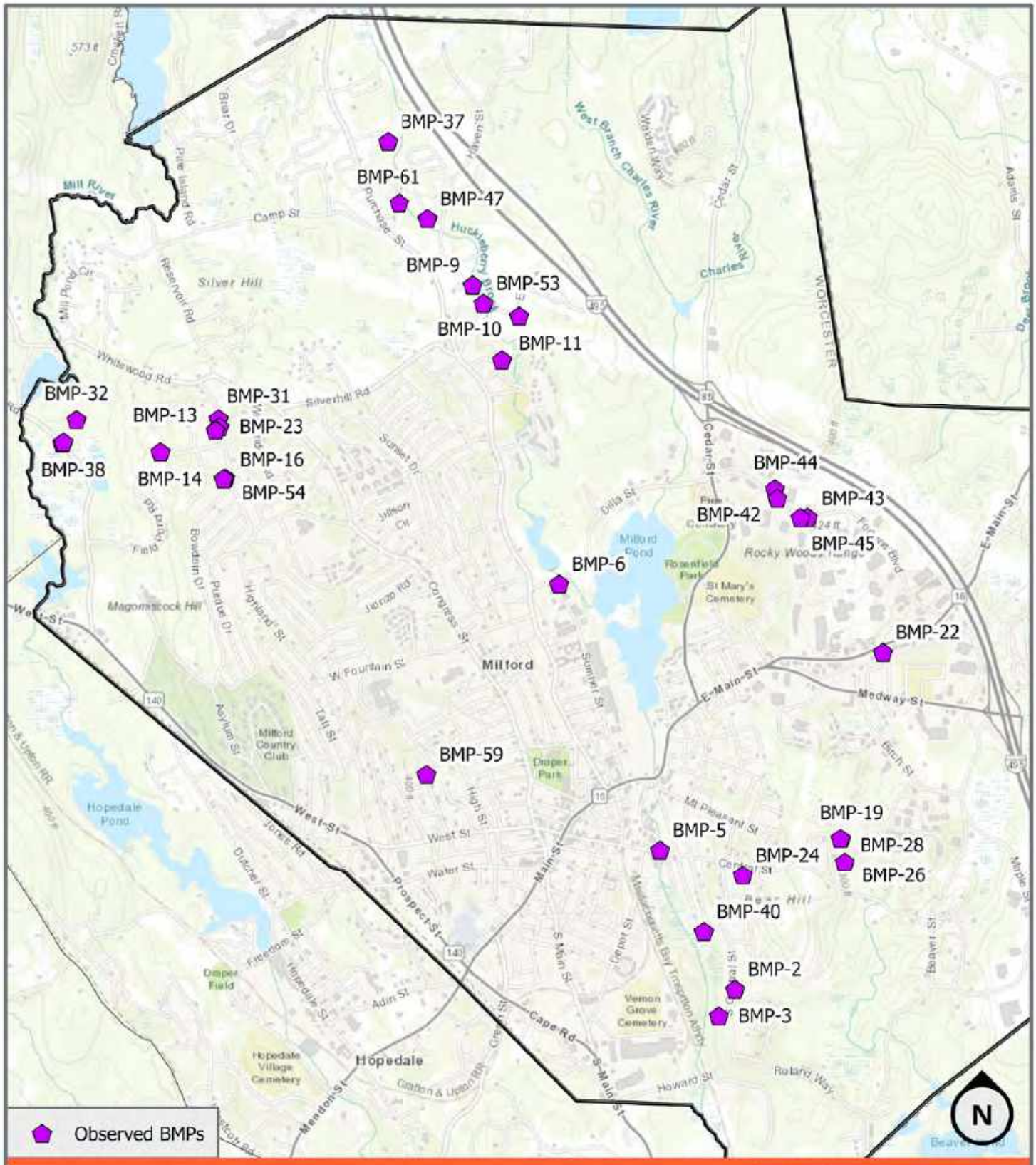
Environmental Partners
Vern S. Lincoln
Project Scientist
P: 617.657.0275
E: vsl@envpartners.com

Figures: Figure 1: BMP Observation Locations

Tables: 1: Stormwater BMP Observation Table
Attachments: BMP Observation Data Forms

Figure 1

Observed BMP Locations



ENVIRONMENTAL PARTNERS

Figure 1: BMP Observations Locations

Milford, Massachusetts

0 1,000 2,000 4,000 Feet

Date Exported: 6/9/2021

Table 1

Stormwater BMP Observation Table

ENVIRONMENTAL PARTNERS

Table 1: Stormwater BMP Observation Table

BMP ID	Date	Weather	Location	BMP Category	BMP Type	Type of Observation	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-2	5/11/2021	Clear	Between the residence of 40 and 42 South Central Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-3	5/11/2021	Clear,Warm	West of 53 South Central Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-5	5/11/2021	Clear	At Department of Public Works	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory
BMP-6	5/11/2021	Clear	At corner of Sumner and Dilla	Treatment BMP	Constructed Stormwater Wetland	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-9	5/11/2021	Clear,Warm	On north/east side of Morey Way	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-10	5/11/2021	Clear,Warm	South side of Eben Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-11	5/11/2021	Clear,Warm	Behind 7 Dynasty Drive and 3 Celestial Circle	Other BMP	Dry Detention Basin	Regular	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-13	5/11/2021	Clear,Warm	Goes alongside Highland Street, right after Gritte Lane	Infiltration BMP	Infiltration Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Not Applicable	Unsatisfactory	Not Applicable	Satisfactory	Not Applicable	Not Applicable	Satisfactory	Satisfactory
BMP-14	5/11/2021	Clear,Warm	In between 19 and 21 Littlefield	Not a BMP	N/A	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-22	5/11/2021	Clear,Warm	Between Community Pediatrics and Prezo Grille & Bar	Not a BMP	N/A	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-23	5/11/2021	Clear,Warm	South of 181 Highland Street's driveway	Not a BMP	N/A	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory
BMP-24	5/11/2021	Clear,Warm	Behind houses on Moschilli Circle	Treatment BMP	Constructed Stormwater Wetland	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-26	5/11/2021	Clear,Warm	Behind #5 Silva Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory
BMP-28	5/11/2021	Clear,Warm	Along #13 Silva's driveway	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory
BMP-31	5/11/2021	Clear,Warm	South of 183 Highland Street's driveway	Not a BMP	N/A	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory
BMP-32	5/11/2021	Clear,Warm	South of Field Pond Road	Other BMP	Dry Detention Basin	Regular	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory

ENVIRONMENTAL PARTNERS

Table 1: Stormwater BMP Observation Table

BMP ID	Date	Weather	Location	BMP Category	BMP Type	Type of Observation	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-35	5/11/2021	Clear,Warm	Near intersection between Fiske Mill and Field Pond Roads	Not a BMP	N/A	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-37	5/11/2021	Clear,Warm	South of the cul-de-sac	Other BMP	Dry Detention Basin	Regular	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-38	5/11/2021	Clear,Warm	Near the intersection of Field Pond and Fiske Mill Roads	Not a BMP	N/A	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-40	5/11/2021	Clear	Behind (west) #91 E Street	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-42	5/11/2021	Clear,Warm	North side of Fortune Blvd	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-43	5/11/2021	Clear,Warm	At entrance to 179 Fortune Blvd	Conveyance BMP	Drainage Channel	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-44	5/11/2021	Clear,Warm	Behind 200 Fortune Blvd	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-45	5/11/2021	Clear,Warm	Near entrance to Nitto Denko Avecia	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-47	5/11/2021	Clear,Warm	Between 4 and 2 Julie Circle	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-53	5/11/2021	Clear,Warm	Near corner of Eben Street and Morey Way	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
BMP-54	5/11/2021	Clear,Warm	South of the cul-de-sac	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-59	5/11/2021	Clear,Warm	East side of Union Street	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Not Applicable	Satisfactory	Unsatisfactory
BMP-61	5/11/2021	Clear,Warm	Behind 8 Selma Circle	Other BMP	Dry Detention Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory

BMP Observation Data Form

BMP-2

Town of Milford, BMP-2, Other BMP

Created	2021-05-10 19:14:50 UTC by EPField 01
Updated	2021-06-30 20:42:00 UTC by EPField 01
Location	42.1309143094, -71.5064429566
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	10:26
Weather	Clear
Inspector	Mollie Scott

General Information

BMP ID	BMP-2
Location	Between the residence of 40 and 42 South Central Street
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	42 S Central St Milford, MA 01757
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 woody vegetation
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess dead leaves and a downed tree in front of headwall
Corrective Action Needed	Remove

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash noted in basin
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	N/A

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?	N/A

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Headwall and inlet pipe into basin visible, but no outlet identified. Water appears to be flowing slightly from the inlet into the basin, but significant overgrowth inhibited closer access to investigate. Significant woody vegetation should be cleared. Dead leaves and some trash/debris should be removed.
Photos	

BMP Observation Data Form

BMP-3

Town of Milford, BMP-3, Other BMP

Created	2021-05-10 19:14:49 UTC by EPField 01
Updated	2021-06-30 20:43:37 UTC by EPField 01
Location	42.1293076396, -71.5077738635
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	10:40
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-3
Location	West of 53 South Central Street
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
Address	53 S Central St Milford, MA 01757
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	Excess growth at base of outlet
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess sticks/fallen leaves at base of outlet
Corrective Action Needed	Remove/Replace

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash caught in vegetation at base of outlet
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

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	Head wall and inlet itself in good condition. Growth and sticks in the rip-rap pad at outlet needs to be removed. Trash should be removed as well.
Photos	

BMP Observation Data Form

BMP-5

Town of Milford, BMP-5, Other BMP

Created	2021-05-10 19:14:53 UTC by EPField 01
Updated	2021-06-30 20:53:27 UTC by EPField 01
Location	42.1393512688, -71.512533389
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	10:01
Weather	Clear
Inspector	Mollie Scott

General Information

BMP ID	BMP-5
Location	At Department of Public Works
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	222 Central St Milford, MA 01757
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	Overgrowth at outlet pipe. Believe there is an inlet pipe as well, not clearly visible due to excess growth at headwall
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?	No
BMP Issue Location/Amount	Significant trash
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant sediment buildup
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash and vegetation at outlet
Corrective Action Needed	Remove trash and prune

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Cracking

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	N/A

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Excess vegetation throughout, most notably at inlet pipe into basin. Trash throughout as well. Sediment present in stone, exacerbating vegetation growth. Sediment, trash, and vegetation should be removed; stone may need to be replenished.
Photos	

BMP Observation Data Form

BMP-6

Town of Milford, BMP-6, Treatment BMP

Created	2021-05-10 19:14:53 UTC by EPField 01
Updated	2021-06-30 20:54:57 UTC by EPField 01
Location	42.1554292251, -71.5207245201
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	09:35
Weather	Clear
Inspector	Mollie Scott

General Information

BMP ID	BMP-6
Location	At corner of Sumner and Dilla
BMP Category	Treatment BMP
BMP Type - Treatment	Constructed Stormwater Wetland
Address	55 Sumner St Milford, MA 01757
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	Excess growth at rip rap at outlet pipe
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash in and around wetland
Corrective Action Needed	Remove Trash/Debris

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?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Mostly in good condition. Rip rap needs to be cleaned or replaces. Woody vegetation and dead vegetation needs to be removed. Trash should be removed as well.
Photos	


Constructing a Wetland to Clean Milford Water

BMP Observation Data Form

BMP-9

Town of Milford, BMP-9, Other BMP

Created	2021-05-10 19:14:51 UTC by EPField 01
Updated	2021-06-30 20:57:41 UTC by EPField 01
Location	42.1735228166, -71.5277630236
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	13:48
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-9
Location	On north/east side of Morey Way
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	1 Morey Way Milford, MA 01757
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 woody 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?	No
BMP Issue Location/Amount	Trash accumulating along edge of basin nearest the roadway, some noted in basin
Corrective Action Needed	Remove Trash/Debris

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	Could not locate inlet into basin due to significant overgrowth
Corrective Action Needed	Clear overgrowth

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

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?	N/A
Notes	Some standing water may indicate poor infiltration. Inlet structure into basin not found due to significant overgrowth. Significant woody vegetation should be cleared. Note poison ivy present.

Photos

BMP Observation Data Form

BMP-10

Town of Milford, BMP-10, Other BMP

Created	2021-05-10 19:14:53 UTC by EPField 01
Updated	2021-06-30 21:01:28 UTC by EPField 01
Location	42.1716611279, -71.523984321
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	13:30
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-10
Location	South side of Eben Street
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	25 Eben St Milford, MA 01757
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	Sticks/ branches overhang outlet pipe, contesting basin slightly.
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant dead leaves
Corrective Action Needed	Remove

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?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	No rip rap at inlet pipe into basin
Corrective Action Needed	Add rip-rap stone

Cracking

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	Water flowing from inlet into basin. Some standing water in basin. Significant overgrowth throughout basin, including at inlet pipe, should be removed.
Photos	

BMP Observation Data Form

BMP-11

Town of Milford, BMP-11, Other BMP

Created	2021-05-10 19:14:51 UTC by EPField 01
Updated	2021-06-30 21:04:36 UTC by EPField 01
Location	42.1690002547, -71.5253717556
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	13:22
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-11
Location	Behind 7 Dynasty Drive and 3 Celestial Circle
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	3 Celestial Cir Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Possible sedimentation at outlet but difficult to access to confirm
Corrective Action Needed	Further assess

Excess Vegetation

Is Status of BMP Satisfactory?	Yes
BMP Issue Location/Amount	Significant dead vegetation

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant dead vegetation in basin
Corrective Action Needed	Remove/Replace

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Cardboard at inlet into basin
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

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	Headwall found but difficult to get clear visual due to fence/structures in backyards of adjacent residents. Significant dead vegetation in basin should be removed and replaced to prevent soil erosion. Cardboard at outlet should be removed.
Photos	

BMP Observation Data Form

BMP-13

Town of Milford, BMP-13, Infiltration BMP

Created	2021-05-10 19:14:50 UTC by EPField 01
Updated	2021-07-01 13:06:56 UTC by EPField 01
Location	42.1647095372, -71.5486796522
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	15:28
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-13
Location	Goes alongside Highland Street, right after Gritte Lane
BMP Category	Infiltration BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
BMP Type - Conveyance	Grassed Channel (Biofilter Swale)
Address	194 Highland St Milford, MA 01757
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

Trash/Debris

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Sediment buildup at outlet pipe
Corrective Action Needed	Remove Sediment

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	N/A

Other Issues

Is Status of BMP Satisfactory?	N/A

Notes	Ditch structure appears to be designed to capture flow routes from catch basin in road. Undisturbed grass cover suggests not frequently inundated. Some sediment buildup blocks bottom of outlet pipe.

Photos

BMP Observation Data Form

BMP-14

Town of Milford, BMP-14, Unknown

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-13 15:59:14 UTC by EPField 01
Location	42.1633941541, -71.553158437
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	15:38
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-14
Location	In between 19 and 21 Littlefield
BMP Category	Unknown
BMP Type - Conveyance	Drainage Channel
Address	21 Littlefield Rd Milford, MA 01757
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?	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?	Yes

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?	N/A
Notes	Infrastructure in good condition. However, should be classified as an outfall and not as a BMP.
Photos	

BMP Observation Data Form

BMP-22

Town of Milford, BMP-22, Unknown

Created	2021-05-10 19:14:49 UTC by EPField 01
Updated	2021-07-13 16:05:17 UTC by EPField 01
Location	42.1513028376, -71.4943838876
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	12:02
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-22
Location	Between Community Pediatrics and Prezo Grille & Bar
BMP Category	Unknown
BMP Type - Infiltration	Infiltration Basin
Address	229 E Main St Milford, MA 01757
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	Lots of dead leaves/twigs around area perimeter
Corrective Action Needed	Remove/Replace

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash noted
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No

BMP Issue Location/Amount	Sediment buildup at culvert
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

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	Infrastructure is not a BMP. Infrastructure is a wetland/stream with a culvert to allow stream flow underneath the E Main Street roadway.
Photos	

BMP Observation Data Form

BMP-23

Town of Milford, BMP-23, Unknown

Created	2021-05-10 19:14:49 UTC by EPField 01
Updated	2021-07-13 16:15:04 UTC by EPField 01
Location	42.1649196137, -71.5483670309
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	15:21
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-23
Location	South of 181 Highland Street's driveway
BMP Category	Unknown
BMP Type - Infiltration	Infiltration Basin
Address	181 Highland St Milford, MA 01757
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	Excess vegetation needs clearing. Fallen leaves and overgrowth preventing infiltration
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Lawn clippings in wetland
Corrective Action Needed	Remove/Replace

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	A few bits of trash along road edge
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Sediment and lawn clippings pooling in at outlet
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Sedimentation at culvert under drive
Corrective Action Needed	Clear sediment from pipe

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?	No
BMP Issue Location/Amount	Significant standing water
Corrective Action Needed	Clear sediment and overgrowth to promote infiltration

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Record is not a BMP; it is a perrenial stream with wetland vegetation in the area in front of 181 Highland Street. Infrastructure is a small culvert underneath the driveway of 181 Highland Street allowing stream to flow. Wetland does have an excess of leaf litter, lawn clippings, sediment, and overgrowth.

Photos

BMP Observation Data Form

BMP-24

Town of Milford, BMP-24, Treatment BMP

Created	2021-05-10 19:14:49 UTC by EPField 01
Updated	2021-07-01 13:47:27 UTC by EPField 01
Location	42.1378186117, -71.505818075
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	10:51
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-24
Location	Behind houses on Moschilli Circle
BMP Category	Treatment BMP
BMP Type - Treatment	Constructed Stormwater Wetland
Address	5 Moschilli Cir Milford, MA 01757
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 vegetation growth within BMP
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess leaves and sticks, particularly at perimeter
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

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	Difficult to see outlet pipe due to overgrowth, but headwall appears to be in good condition. Wetland is free of trash/debris, has need for vegetation clearing. Water sounds like it is steadily flowing and there is some standing water in the wetland.
Photos	

BMP Observation Data Form

BMP-26

Town of Milford, BMP-26, Other BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-01 13:51:12 UTC by EPField 01
Location	42.1386225677, -71.4975493609
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	11:09
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-26
Location	Behind #5 Silva Street
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	5 Silva St Milford, MA 01757
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 twig and branches around headwall
Corrective Action Needed	Clear excess dead vegetation

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?	Yes

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	Two different headwall/discharge structures present. Some standing water in basin but appears to be functioning as designed. Free of debris. Requires clearing of dead vegetation, but generally in good condition.
Photos	

BMP Observation Data Form

BMP-28

Town of Milford, BMP-28, Other BMP

Created	2021-05-10 19:14:50 UTC by EPField 01
Updated	2021-07-13 17:20:20 UTC by EPField 01
Location	42.1400555283, -71.4978809246
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	11:23
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-28
Location	Along #13 Silva's driveway
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	13 Silva St Milford, MA 01757
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
BMP Issue Location/Amount	Excess dead vegetation

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess dead vegetation at headwall and and in rip-rap
Corrective Action Needed	Clear dead vegetation

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?	Yes

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	BMP includes primary inlet and detention area plus an additional basin which likely serves as the overflow area to the primary basin. The overflow area was originally recorded as BMP-19; the BMP-19 record has been absorbed into this record. Excess dead vegetation make outlet pipe difficult to see. Buildup of dead vegetation on in rip rap. No flow/water detected. Significant dead vegetation in primary basin; excess leaf litter throughout overflow basin.
Photos	

inlet into basin

overflow area

inlet in primary basin to overflow

outlet into overflow

BMP Observation Data Form

BMP-32

Town of Milford, BMP-32, Other BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-01 14:26:49 UTC by EPField 01
Location	42.1653430767, -71.5599763021
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	16:02
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-32
Location	South of Field Pond Road
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	74 Field Pond Rd Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Loose soil at top of basin alongside road
Corrective Action Needed	Stabilize soil

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some vegetation overgrowth, weeds
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?	No
BMP Issue Location/Amount	Some trash present
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

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?	N/A
Notes	Dry detention basin with sediment forebay. Flared end outlet structure and rip rap pad well maintained. Weeds and trash in basinshould be removed. Vegetation needs to become better established.
Photos	

BMP Observation Data Form

BMP-35

Town of Milford, BMP-35, Unknown

Created	2021-05-10 19:14:51 UTC by EPField 01
Updated	2021-07-13 16:21:28 UTC by EPField 01
Location	42.1639881841, -71.5610320866
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	16:25
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-35
Location	Near intersection between Fiske Mill and Field Pond Roads
BMP Category	Unknown
BMP Type - Conveyance	Drainage Channel
Address	64–98 Field Pond Rd Milford, MA 01757
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	Some fallen leaves building up at outlet and in rip rap
Corrective Action Needed	Remove/Replace

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	A few bits of trash noted
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

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	Infrastructure is an outfall, not a BMP. Outfall routed through flared end structure onto rip rap pad. Flared end and rip rap in good condition other than slight buildup of leaf litter and vegetation.

Photos

BMP Observation Data Form

BMP-37

Town of Milford, BMP-37, Other BMP

Created	2021-05-10 19:14:50 UTC by EPField 01
Updated	2021-07-01 14:32:00 UTC by EPField 01
Location	42.1821949259, -71.5346720909
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	14:30
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-37
Location	South of the cul-de-sac
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Structural Pretreatment	Sediment Forebay
BMP Type - Infiltration	Infiltration Basin
Address	5 Farmer Cir Milford, MA 01757
Type of Inspection	Regular
Inspection Information	

Invasive Species

Is Status of BMP Satisfactory?	Yes

Soil Erosion

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some areas of sparse vegetation on floor of basin
Corrective Action Needed	Restore vegetation

Excess Vegetation

Is Status of BMP Satisfactory?	Yes

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some buildup of dead vegetation on floor of basin
Corrective Action Needed	Remove

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?	No
BMP Issue Location/Amount	Possible sedimentation and fallen leaves buildup at outlet area
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

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?	N/A
Notes	There appears to be a sediment forebay at outlet structure. If so, it is functioning properly as there is water pooled with some oil sheen. If not intended to be forebay, then build up of leaves and sediment is causing improper pooling. Basin is dry and otherwise in fairly good condition. Berm and slopes well maintained. Some excess leaves throughout basin should be removed. Vegetation at floor of basin should be restored to prevent soil erosion.

Photos

BMP Observation Data Form

BMP-38

Town of Milford, BMP-38, Unknown

Created	2021-05-10 19:14:51 UTC by EPField 01
Updated	2021-07-13 16:22:56 UTC by EPField 01
Location	42.163915866, -71.5611440688
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	16:27
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-38
Location	Near the intersection of Field Pond and Fiske Mill Roads
BMP Category	Unknown
BMP Type - Conveyance	Drainage Channel
Address	64–98 Field Pond Rd Milford, MA 01757
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	Some vegetation growing in edges of rip rap pad
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Fallen leaf buildup in outlet and some in rip rap
Corrective Action Needed	Remove/Replace

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	A few bits of trash noted
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

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?	N/A

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	Infrastructure is an outfall, not a BMP. Outfall routed through flared end structure onto rip rap pad. Some rip rap stones and leaf litter and in flared end structure.

Photos

BMP Observation Data Form

BMP-40

Town of Milford, BMP-40, Other BMP

Created	2021-05-10 19:14:49 UTC by EPField 01
Updated	2021-07-01 14:34:46 UTC by EPField 01
Location	42.1343936518, -71.5089801583
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	10:16
Weather	Clear
Inspector	Mollie Scott

General Information

BMP ID	BMP-40
Location	Behind (west) #91 E Street
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
Address	91 East Street Ext Milford, MA 01757
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	Extensively overgrown
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?	No
BMP Issue Location/Amount	Some debris at outlet
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

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	Vegetation is significantly overgrown and should be pruned. Water flowing from outlet pipe. Some trash/debris at outlet area
Photos	

top view of inlet

inlet

BMP Observation Data Form

BMP-42

Town of Milford, BMP-42, Conveyance BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-13 16:58:27 UTC by EPField 01
Location	42.1606062935, -71.503017582
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	12:49
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-42
Location	North side of Fortune Blvd
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	200 Fortune Blvd Milford, MA 01757
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	Slight leaf build up in rip rap, several inches of leaves noted in downstream end of culvert.
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	A few bits of trash noted in rip rap
Corrective Action Needed	Remove Trash/Debris

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?	N/A

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	Drainage channel follows roadway and passes through culvert underneath driveway of 200 Fortune. Some leaves and trash in rip rap. Discharge leads to wet basin BMP-44.
Photos	

BMP Observation Data Form

BMP-43

Town of Milford, BMP-43, Conveyance BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-05-11 16:35:10 UTC by EPField 01
Location	42.159445351, -71.500550285
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	12:29
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-43
Location	At entrance to 179 Fortune Blvd
BMP Category	Conveyance BMP
BMP Type - Conveyance	Drainage Channel
Address	297–299 Fortune Blvd Milford, MA 01757
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	Build up of dead leaves at headwall/outlet
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash buildup from road
Corrective Action Needed	Remove Trash/Debris

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?	N/A

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	Channel seems to go under driveway of 179 Fortune. Flared end section shown in third photo appears to be downstream outlet pipe. Upstream inlet not visible, most likely due to build up of leaves at headwall. Leaves found in flared end and along rip rap at outlet also.
Photos	

BMP Observation Data Form

BMP-44

Town of Milford, BMP-44, Treatment BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-13 16:51:53 UTC by EPField 01
Location	42.1611720569, -71.5032121184
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	12:55
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-44
Location	Behind 200 Fortune Blvd
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	200 Fortune Blvd Milford, MA 01757
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	Overgrowth impeding stormwater routing path.
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant fallen leaves in rip rap near discharge point. Some branches and dead vegetation along edge of water.
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Trash along vegetation on edge of roadway only. None noted within wet basin itself.
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	N/A

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?	N/A
Notes	Several feet of standing water. Area is relatively pristine with some fallen trees and overgrowth along edges of water. Water flowing into basin from northeast side. BMP appears to also accept drainage from Fortune Boulevard; more research is needed to understand if BMP is maintained privately or by Town.
Photos	

BMP Observation Data Form

BMP-45

Town of Milford, BMP-45, Treatment BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-13 16:54:24 UTC by EPField 01
Location	42.1594327573, -71.501140932
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	12:38
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-45
Location	Near entrance to Nitto Denko Avecia
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	273–277 Fortune Blvd Milford, MA 01757
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	Overgrowth throughout impedes access
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant dead leaf/branch cover clogging rip rap and impeding access
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant trash along rip rap and edge of BMP nearest the roadway
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No

BMP Issue Location/Amount	Sedimentation in rip rap
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	N/A

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	View of standing water impeded by thick perimeter vegetation but appears to be ponding and relatively pristine. Rip rap conveyance into pond area from Fortune Boulevard it clogged with sediment and dead leaves. There may be an additional inlet. Significant trash/debris in rip rap and in perimeter vegetation. It is unclear who owns this property. BMP may be privately owned; more research is required.
Photos	

BMP Observation Data Form

BMP-47

Town of Milford, BMP-47, Treatment BMP

Created	2021-05-10 19:14:51 UTC by EPField 01
Updated	2021-07-13 17:06:41 UTC by EPField 01
Location	42.177534, -71.531427
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	14:00
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-47
Location	Between 4 and 2 Julie Circle
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	2 Julie Cir Milford, MA 01757
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	Young tree growth at mouth of outlet pipe. May pose issue as trees grow.
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Fallen leaves and downed branches. Lots of leaves gathered in rip rap at outlet.
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash present
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	No

BMP Issue Location/Amount	Slight sedimentation at inlet pipe across street
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?	Yes

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	BMP categorized as "wet basin" due to standing water, but the distinction is unclear. Reason for standing water is unknown. Standing water could be caused by significant leaf letter/dead vegetation and possible sedimentation impeding infiltration. Regardless, dead vegetation and sediment should be removed. Excess vegetation also requires clearing. Trash should be removed from basin.
Photos	 culvert across street from basin

outlet control structure

outlet control structure

inlet

basin; standing water

BMP Observation Data Form

BMP-53

Town of Milford, BMP-53, Other BMP

Created	2021-05-10 19:14:48 UTC by EPField 01
Updated	2021-07-01 14:49:47 UTC by EPField 01
Location	42.1724239612, -71.5268868397
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	13:41
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-53
Location	Near corner of Eben Street and Morey Way
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
Address	1 Morey Way Milford, MA 01757
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?	No
BMP Issue Location/Amount	Fallen leaves and some sticks/branches
Corrective Action Needed	Remove/Replace

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?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	N/A

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Cracking

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	N/A

Other Issues

Is Status of BMP Satisfactory?	N/A
Notes	Area surrounding discharge point/headwall relatively free of vegetation. Cannot find outlet structure. Basin is separated by berm from Huckleberry Brook.

Photos

BMP Observation Data Form

BMP-54

Town of Milford, BMP-54, Treatment BMP

Created	2021-05-10 19:14:50 UTC by EPField 01
Updated	2021-07-13 17:28:04 UTC by EPField 01
Location	42.1617789915, -71.548025021
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	15:47
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-54
Location	South of the cul-de-sac
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	4 Diego Dr Milford, MA 01757
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	Excess vegetation throughout
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess fallen leaves on floor of basin, sticks and twigs throughout, including on top of catch basin on top outlet control structure (see photos)
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash present
Corrective Action Needed	Remove Trash/Debris

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?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	BMP includes a sediment forebay and a wet basin, separated by a berm. Sediment forebay was previously recorded as a separate BMP, BMP-19. There are two inlets into sediment forebay. The water level in the forebay is slightly above lower inlet invert. Some trash and significant dead vegetation, sedimentation present in forebay should be removed. Wet basin has outlet control structure with no perceived flow, but significant standing water in basin. Water is cloudy. Significant dead vegetation throughout basin needs clearing. Purpose of the perforated PVC standing pipe is unclear. It may be some type of monitoring device to monitor water levels.
Photos	 wet basin

wet basin

wet basin outlet control structure

wet basin with standing pipe

sediment forebay

sediment forebay

BMP Observation Data Form

BMP-59

Town of Milford, BMP-59, Treatment BMP

Created	2021-05-10 19:14:52 UTC by EPField 01
Updated	2021-07-01 14:50:57 UTC by EPField 01
Location	42.1439228696, -71.5314929656
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	16:45
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-59
Location	East side of Union Street
BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	8 Caroline Dr Milford, MA 01757
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	Overgrowth
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess dead vegetation throughout including downed branches
Corrective Action Needed	Remove/Replace

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash present
Corrective Action Needed	Remove Trash/Debris

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?	Yes

Other Issues

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Clouded water
Corrective Action Needed	Clear sediment and debris
Notes	Standing water in basin. There appears to be some sediment and dead vegetation causing clogging. Water is clouded. Trash/debris present. Needs significant clearing/cleaning. Headwall appears to be in good condition.
Photos	

BMP Observation Data Form

BMP-61

Town of Milford, BMP-61, Other BMP

Created	2021-05-10 19:14:53 UTC by EPField 01
Updated	2021-07-01 14:53:17 UTC by EPField 01
Location	42.1784806143, -71.533755346
Status	Inspected
Client	Town of Milford
Date	2021-05-11
Time	14:13
Weather	Clear, Warm
Inspector	Mollie Scott

General Information

BMP ID	BMP-61
Location	Behind 8 Selma Circle
BMP Category	Other BMP
BMP Type - Other	Dry Detention Basin
BMP Type - Infiltration	Infiltration Basin
Address	8 Selma Cir Milford, MA 01757
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	Excess dead vegetation in basin and rip-rap
Corrective Action Needed	Clear dead vegetation

Excess Salt

Is Status of BMP Satisfactory?	Yes

Trash/Debris

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Some trash present
Corrective Action Needed	Remove Trash/Debris

Oil/Grease

Is Status of BMP Satisfactory?	Yes

Excess Sedimentation

Is Status of BMP Satisfactory?	Yes

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet/Outlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	HDPE inlet clogged with leaves and sticks
Corrective Action Needed	Remove leaves and sticks

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?	N/A
Notes	There is an outlet control structure with Huckleberry Brook flowing on other side of berm. Second HDPE piped inlet coming from direction of road. Excess dead vegetation, including in tip-rap stone at discharge pipe. Some standing water; infiltration may be slowed due to dead vegetation ground cover.
Photos	

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