STORMWATER MANAGEMENT PLAN (SWMP)

Rockland, MA

September 2023

ENVIRONMENTAL PARTNERS

— An Apex Company —

TABLE OF CONTENTS

LIST OF TABLES ..... **III**

LIST OF FIGURES ..... **IV**

LIST OF APPENDICIES ..... **V**

SECTION 1 BACKGROUND **1**

SECTION 1.1 STORMWATER REGULATION 1

SECTION 1.2 PERMIT PROGRAM BACKGROUND 1

SECTION 1.3 STORMWATER MANAGEMENT PLAN (SWMP) 1

SECTION 1.4 TOWN SPECIFIC MS4 BACKGROUND 2

SECTION 2 SWMP COMPONENTS **3**

SECTION 2.1 PARTIES INVOLVED IN IMPLEMENTATION 3

SECTION 2.2 DOCUMENTATION REGARDING ENDANGERED SPECIES 3

SECTION 2.3 DOCUMENTATION REGARDING HISTORIC PROPERTIES 4

SECTION 2.4 DOCUMENTATION REGARDING DISCHARGES 4

SECTION 2.5 SANITARY SEWER OVERFLOW (SSO) INVENTORY 4

SECTION 2.6 IDDE PROGRAM AND BYLAWS 5

SECTION 2.7 SEDIMENT AND EROSION CONTROL PROCEDURES 5

SECTION 2.8 PUBLIC DRINKING WATER SUPPLY SOURCES PROTECTION 5

SECTION 2.9 ACTIVITIES TO MONITOR DISCHARGES 5

SECTION 2.10 ANNUAL PROGRAM EVALUATION 5

SECTION 3 MINIMUM CONTROL MEASURES **6**

SECTION 3.1 PUBLIC EDUCATION AND OUTREACH 6

Section 3.1.1 Background *6*

Section 3.1.2 Best Management Practices *6*

SECTION 3.2 PUBLIC INVOLVEMENT AND PARTICIPATION 7

Section 3.2.1 Background *7*

Section 3.2.2 Best Management Practices *7*

SECTION 3.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM 8

Section 3.3.1 Background *8*

Section 3.3.2 Best Management Practices *9*
SECTION 3.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL 10
Section 3.4.1 Background *10*
Section 3.4.2 Best Management Practices *10*
SECTION 3.5 POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT 11
Section 3.5.1 Background *11*
Section 3.5.2 Best Management Practices *11*
SECTION 3.6 GOOD HOUSEKEEPING AND POLLUTION PREVENTION FOR TOWN OWNED PROPERTIES *12*
Section 3.6.1 Background *12*
Section 3.6.2 Best Management Practices *13*
SECTION 4 WATER QUALITY BASED REQUIREMENTS 15
SECTION 4.1 BACKGROUND 15
SECTION 4.2 ADDITIONAL IMPAIRMENT REQUIREMENTS 16
Section 4.2.1 Public Education and Outreach *16*
Section 4.2.2 Stormwater Management in New Development and Redevelopment *16*
Section 4.2.3 Good Housekeeping and Pollution Prevention *17*
Section 4.2.4 Illicit Discharge *17*
Section 4.2.5 Additional Requirements (Phosphorus) *17*

LIST OF TABLES

Table 2-1: List of Parties Responsible for SWMP Implementation 3
Table 3-1: Impaired Waters, TMDLs and Impairments 8

LIST OF FIGURES

Figure 1 - System Locus
Figure 2 - MS4 Urbanized Areas
Figure 3 - Town Watersheds
Figure 4 - Stormwater System Map

LIST OF APPENDICIES

APPENDIX A - MA MS4 Hyperlinks and References
APPENDIX B - Notice of Intent
APPENDIX C - Permit Schedule
APPENDIX D - Endangered Species and Critical Habitats Protection Documents
APPENDIX E - MA MS4 General Permit Appendix D - Historic Properties Documents
APPENDIX F - New or Increased Discharges Tracking Log
APPENDIX G - SSO Inventory
APPENDIX H - Current Stormwater Bylaws
APPENDIX I - Annual Reports
APPENDIX J - Minimum Control Measures BMPs
APPENDIX K - Operations and Maintenance (O&M) Plan
APPENDIX L - Illicit Discharge Detection and Elimination (IDDE) Plan
APPENDIX M - Stormwater Pollution Prevention Plans (SWPPPs)
APPENDIX N - Municipal Facility Audit Report
APPENDIX O - BMP Observation Reports
APPENDIX P - Year 5 MCM Memos

SECTION 1 BACKGROUND

SECTION 1.1 STORMWATER REGULATION

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

SECTION 1.2 PERMIT PROGRAM BACKGROUND

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

SECTION 1.3 STORMWATER MANAGEMENT PLAN (SWMP)

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

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

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

SECTION 1.4 TOWN SPECIFIC MS4 BACKGROUND

The Town must give special consideration to and meet eligibility requirements for their discharges to be able to apply for coverage under the General Permit. Eligibility will be determined based on three categories: Endangered Species Act, National Historic Preservation Act, and Water Quality Impaired Waters. The Town must establish that discharges from its storm drain system do not adversely impact endangered species, critical habitats, and historic properties in order to be covered by the General Permit. Furthermore, the Town must identify all receiving waters that have been classified as Water Quality Impaired Waters by the Massachusetts Department of Environmental Protection. The Town of Rockland and its surrounding water bodies are shown on **Figure 1: System Locus**. The Notice of Intent (NOI) for coverage under the Small MS4 General Permit was submitted to EPA and MassDEP on September 28, 2018. A copy of the NOI is provided in **Appendix B**.

In December of 1986, a fuel storage tank at the former South Weymouth Naval Air Station was overfilled and approximately 6,000 gallons of jet fuel flowed over land, some of which entered a storm drain that discharged to French Stream. Fuel from this spill traveled off site through French Stream to Rockland. The EPA determined that offsite areas impacted by the spill were adequately remediated. It was concluded that past and current exposures to surface water and sediment in French's Stream through recreational use are not likely to result in adverse health effects. Cancer distribution patterns in Rockland were reviewed for the years 1982 – 1994 and for the years 1995 – 1998, and no unusual geographic concentrations of contamination-associated cancer types were noted.

SECTION 2 SWMP COMPONENTS

SECTION 2.1 PARTIES INVOLVED IN IMPLEMENTATION

Stormwater programs in the Town of Rockland are currently a responsibility of the Highway Superintendent, David Taylor. 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
David Taylor	Superintendent	Highway Department
Robyn Day	Superintendent	Sewer Department
Delshaune Flipp	Health Agent	Board of Health
Joseph Lapointe	Water Superintendent	Water Department
Douglas Golemme	Chairman	Conservation Commission
Michael Corbett	Chairman	Planning Board
Lori Wolfe	Director of Marketing & Communications	NSRWA

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 Rockland's eligibility determination of Criterion C with regard to federal Endangered and Threatened Species and Critical Habitat Protection. Criterion C states that, "determination is made by EPA, or by the applicant and affirmed by EPA, that the stormwater discharges and discharge related activities will have "no affect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the USFWS." In this case, USFWS provided a letter in place of a concurrence letter for informal consultation.
The attachments in **Appendix D** include the aforementioned letter, as well as the results of the IPaC environmental review process. Using the IPaC environmental review process, one endangered species has been identified within Rockland's boundaries: the Northern Long-Eared Bat. This species

does not have critical habitats designated within the Town, and the MS4 Permit will not adversely affect the listed species within the MS4 area.

SECTION 2.3 DOCUMENTATION REGARDING HISTORIC PROPERTIES

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

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

SECTION 2.4 DOCUMENTATION REGARDING DISCHARGES

Attached in **Appendix F** is the documentation for tracking any new or increased discharges granted by MassDEP in compliance with part 2.1.2 of the Permit. At this time, the Town of Rockland has no new and/or increased discharges. The Town will document any new and/or increased discharges on the form provided in **Appendix F** and include project specific information regarding best management practices implemented for those discharges. A sample discharges form is provided in **Appendix F**.

SECTION 2.5 SANITARY SEWER OVERFLOW (SSO) INVENTORY

In the event of an overflow or bypass, a notification must be reported within 24 hours by phone to MassDEP, EPA, and other relevant parties. The verbal notification should be followed up with a written report following MassDEP's Sanitary Sewer Overflow (SSO)/Bypass notification form within five calendar days of the time you become aware of the overflow, bypass, or backup.

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

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

SECTION 2.6 IDDE PROGRAM AND BYLAWS

The Town's IDDE plan was developed during the first year of the new MS4 Permit (June 2019). The IDDE program is detailed in section 3.3 of Minimum Control Measures. The Town's current Stormwater Management and Erosion Control and Illicit Discharge Bylaw is provided in **Appendix H**.

SECTION 2.7 SEDIMENT AND EROSION CONTROL PROCEDURES

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

SECTION 2.8 PUBLIC DRINKING WATER SUPPLY SOURCES PROTECTION

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

SECTION 2.9 ACTIVITIES TO MONITOR DISCHARGES

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

SECTION 2.10 ANNUAL PROGRAM EVALUATION

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

SECTION 3 MINIMUM CONTROL MEASURES

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

SECTION 3.1 PUBLIC EDUCATION AND OUTREACH

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

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

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

Section 3.1.1 Background

Responsible parties for public education and outreach efforts include the Highway Department, Sewer Department, IT Department, Board of Health, Planning Board, Conservation Commission, and the North & South Rivers Watershed Association (NSRWA). The Town of Rockland has implemented several actions in efforts to reach public education and outreach goals. The Town continues to support the NSRWA Greenscapes Program. Educational outreach through Greenscapes Program continues in additional to developing additional materials to meet requirements of the stormwater permit with NSRWA. The Town of Rockland's web site continues to be updated with additional stormwater information.

Section 3.1.2 Best Management Practices

I. Distribution of a minimum of two (2) educational messages over the permit term to the required audiences within the permit term (5 years), as listed below.
    a. Residents
        i. Publish outreach materials; distribute new resident packets to residents within Wetland Protection Areas.
        ii. Develop/maintain stormwater website and/or utilize Town social media for outreach. Provide specific information directed towards residents.
    b. Businesses, Institutions, and Commercial Facilities

i. Include stormwater information in permit materials.
ii. Develop/maintain stormwater website and/or utilize Town social media for outreach. Provide specific information directed towards businesses, institutions, and commercial facilities.

c. Developers (Construction)
    i. Include stormwater information in permit materials. Review and update application forms to meet the new requirements.
    ii. Develop/maintain stormwater website and/or utilize Town social media for outreach. Provide specific information directed towards developers.

d. Industrial Facilities
    i. Distribute stormwater information to industrial groups based on zoning and property use.
    ii. Develop/maintain stormwater website and/or utilize Town social media for outreach. Provide specific information directed towards industrial facilities.

SECTION 3.2 PUBLIC INVOLVEMENT AND PARTICIPATION

The objective of the public involvement and participation control measure, permit part 2.3.3., is for the Town to provide the public with opportunities to engage in activities that promote good stormwater practices. The public has also 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 Highway Department and the Sewer Department. The Town continues to conduct community cleanup days, fund outfall testing by the Rockland Senior High School environmental club, and support NSRWA stream bank cleaning days.

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 fund two rounds of water quality sampling of priority water bodies.
    c. Continue annual community cleanup days and stream bank cleaning events with NSRWA.

SECTION 3.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

The Town has implemented an IDDE program, per MS4 Permit part 2.3.4, in order to find and eliminate non-stormwater discharge sources. Procedures have been be implemented to fix any prevalent issues in the Town's storm sewer system. The following 70 outfall structures listed in the table below discharge to the Town of Rockland's MS4 area. These outfall structures are displayed on Town's inventory of outfall structures are 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

Water Body Name	Segment ID	Category	Impairment(s)	Associated Approved TMDL
Old Swamp River	MA74-03	4a	• (Fish Passage Barrier*) • Escherichia Coli (E. Coli) • Fecal Coliform	
Cushing Brook	MA94-40	5	• Escherichia Coli (E. Coli)	
French Stream	MA94-03	5	• Dissolved Oxygen • Escherichia Coli (E. Coli) • Fecal Coliform • Fish Bioassessments • Phosphorus, Total • Whole Effluent Toxicity (WET)	E. Coli and Fecal Coliform TMDL No. 61718
Studleys Pond	MA94151	5	• Fecal Coliform	

Section 3.3.1 Background

Responsible parties for IDDE efforts include the Highway Department, Sewer Department, Planning Board, Board of Health, and Conservation Commission. 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 has developed and implemented an IDDE program. The IDDE program is outlined in the IDDE Plan, finalized in June 2019. The Town has verified drainage connectivity mapping and continues to update outfall and catchment information and screening results.

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. This ordinance, by-law, or other regulatory mechanism was a requirement of the MS4-2003 permit and was required to be effective by May 1, 2008.

II. SSO Inventory
    a. Develop SSO Inventory Database within one year of effective permit date that logs historical SSOs that have occurred in the last 5 years, as discussed in further detail in section 2.5.
        i. Coordinate with Highway Department for tracking of any future septic or SSOs.

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

IV. Written IDDE Program Development
    a. Develop and complete written IDDE program within 1 year of effective permit date. The IDDE program and permit attachments will be available at Rockland Town Hall.

V. Implement IDDE Program
    a. Implement catchment investigations according to program and permit conditions within 18 months of the effective date of the Permit.
        i. Continue to enforce bylaw.
        ii. Draft and implement stormwater management regulations.
        iii. Coordinate water quality monitoring with dry weather screening
            1. New monitoring system should include surveying for illicit discharge detection.

VI. Employee Training
    a. Coordinate annual stormwater training and incorporate with training required in Section 6.2.IV.B.

VII. Dry Weather Screening

a. Conduct screening in accordance with outfall screening procedure and permit conditions.
    i. 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
b. permit conditions, and as determined by dry weather screening results.

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

X. Continue to eliminate illicit discharge violations and update regulations.

SECTION 3.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

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

Section 3.4.1 Background

The Town of Rockland has adopted construction site stormwater runoff measures and have 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.

Section 3.4.2 Best Management Practices

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

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

III. Erosion and Sediment Control Ordinance
a. Adoption of requirements for construction operators to implement a sediment and erosion control program within 1 year of the effective date of the Permit.
    i. Set limit of 1 acre before project requires inspection by Town official.
        1. Coordinate limits and requirements with fill/extraction permits.
b. 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 1 year of the effective date of the Permit.
    i. Incorporate into Town's general conditions for building permit and/or site plan review.
    ii. Review and modify Town bylaw to meet new requirements.

V. 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 Background

The Town of Rockland has adopted post-construction stormwater management regulations based on IDDE bylaws. Ongoing enforcement of bylaws continues. The Highway Department, Planning Board, Board of Health, and Conservation Commission are all responsible for stormwater management in new and redevelopment.

Section 3.5.2 Best Management Practices

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

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

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

IV. Allow Green Infrastructure

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

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

VI. Ensure any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality.
    a. Within 2 years of permit effective date, adopt, amend, or modify regulation mechanisms to meet permit requirements.
        i. Review rules and regulations and modify as needed. Include evaluation of subdivision/redevelopment requirements to keep stormwater runoff onsite and for long-term operations and management of private BMPs.
        ii. Continue to implement Post-Construction Site Runoff Control Bylaw.

SECTION 3.6 GOOD HOUSEKEEPING AND POLLUTION PREVENTION FOR TOWN OWNED PROPERTIES

An operations and maintenance program must be implemented by the Town for Town-owned operations. The program shall focus on preventing or reducing pollutant runoff and protecting water quality from Town operations.

Section 3.6.1 Background

The Town of Rockland has developed and implemented an O&M Plan, which is attached as **Appendix K**. In addition, the Town has developed Stormwater Pollution Prevention Plans (SWPPPs) for the highway department facility and transfer station.

The Town of Rockland 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 lack of sand from snow and ice operations reduces the need for semi-annual collections.

Hazardous waste collection takes place annually. Additionally, the Town transfer station offers waste oil and anti-freeze collection to Town residents as well as access to HHW events in other South

Shore Recycling Cooperative communities. The Town also offers a 24/7 prescription drug drop off receptacle to minimize pharmaceutical waste from entering the groundwater.

The Town completes annual inspections of its inventory of stormwater best management practices. In addition, the Town completed an inventory and stormwater audit of all Town-owned facilities, the audit report is attached as **Appendix N**.

The Highway Department, Conservation Commission, and Board of Health are responsible for pollution prevention BMPs.

Section 3.6.2 Best Management Practices

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

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

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

IV. Stormwater Pollution Prevention Plan (SWPPP) For Maintenance Garages, Transfer Stations and Other Waste-Handling Facilities.
    a. Develop plan within 2 years of permit effective date.
    b. Schedule annual employee training.
        i. Look into 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 improved recycling standards and requirements.
        i. Advertise rigid plastic and antifreeze recycling to public. Enforce new standards for private haulers.

V. Catch Basin Cleaning
    a. Develop and implement a catch basin cleaning schedule with a goal of ensuring no catch basin is more than 50% full.
    b. Document catch basins inspected and cleaned, including total mass removed and proper disposal.
    c. Ensure that all catch basins are cleaned annually and develop reporting and record keeping procedures for cleaning and for repair of damaged catch basins.

VI. Street Sweeping Program

a. Sweep streets (rural and uncurbed exceptions apply) a minimum of once a year in the spring.
b. Each annual report shall include number of miles cleaned and volume or mass of material removed. Continue to implement street sweeping program.

VII. Road Salt Use Optimization Program
a. Develop and implement winter road maintenance procedures including use and storage of salt and sand.
b. Minimize the use of salts
    i. Calibrate spreaders to reduce salt use.
c. Ensure snow is not disposed into waters.
d. Continue working on salt reduction strategies.

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 as part of South Shore Recycling Cooperative

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

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

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

SECTION 4.1 BACKGROUND

Best management practices aim to improve and mitigate stormwater water quality impairments. This program will focus on impaired waters requiring a TMDL in the South Coastal Watershed, shown on **Figure 4: Town Watersheds**.

The majority of the Town outfalls are located within the South Coastal Watershed. This area can be seen on **Figure 4: Town Watersheds**. The South Coastal Watershed has an approved TMDL for bacteria and pathogens. These impairments require the Town to follow the specific requirements listed under **Appendix H** to mitigate bacteria and pathogen discharges from the MS4 to the respective watershed. The remaining outfalls are located within the Boston Harbor: Weymouth and Weir Watershed. This watershed also has a watershed-wide EPA approved TMDL for bacteria and pathogens.

The Town of Rockland is recorded as being partially within the Taunton River Watershed, but there are currently no existing MS4 discharges within the watershed that are less than 100 feet from a waterbody.

SECTION 4.2 ADDITIONAL IMPAIRMENT REQUIREMENTS

Section 4.2.1 Public Education and Outreach

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

B. Phosphorus
    1. 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.
    2. Distribute an annual message in the summer (June/July) timeframe encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.
    3. Distribute an annual message in the fall (August/September/October) timeframe encouraging the proper disposal of leaf litter.
    4. 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
    1. Include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.
    2. 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 Housekeeping and Pollution Prevention

A. Phosphorus
    1. Establish procedures to properly manage grass cuttings and leaf litter on Town property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces.
    2. Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii. near impaired waters 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
    1. Implement the illicit discharge program required by the Permit. Catchments draining to any water body impaired for bacteria or pathogens shall be designated either Problem Catchments or HIGH priority in implementation of the IDDE program.

Section 4.2.5 Additional Requirements (Phosphorus)

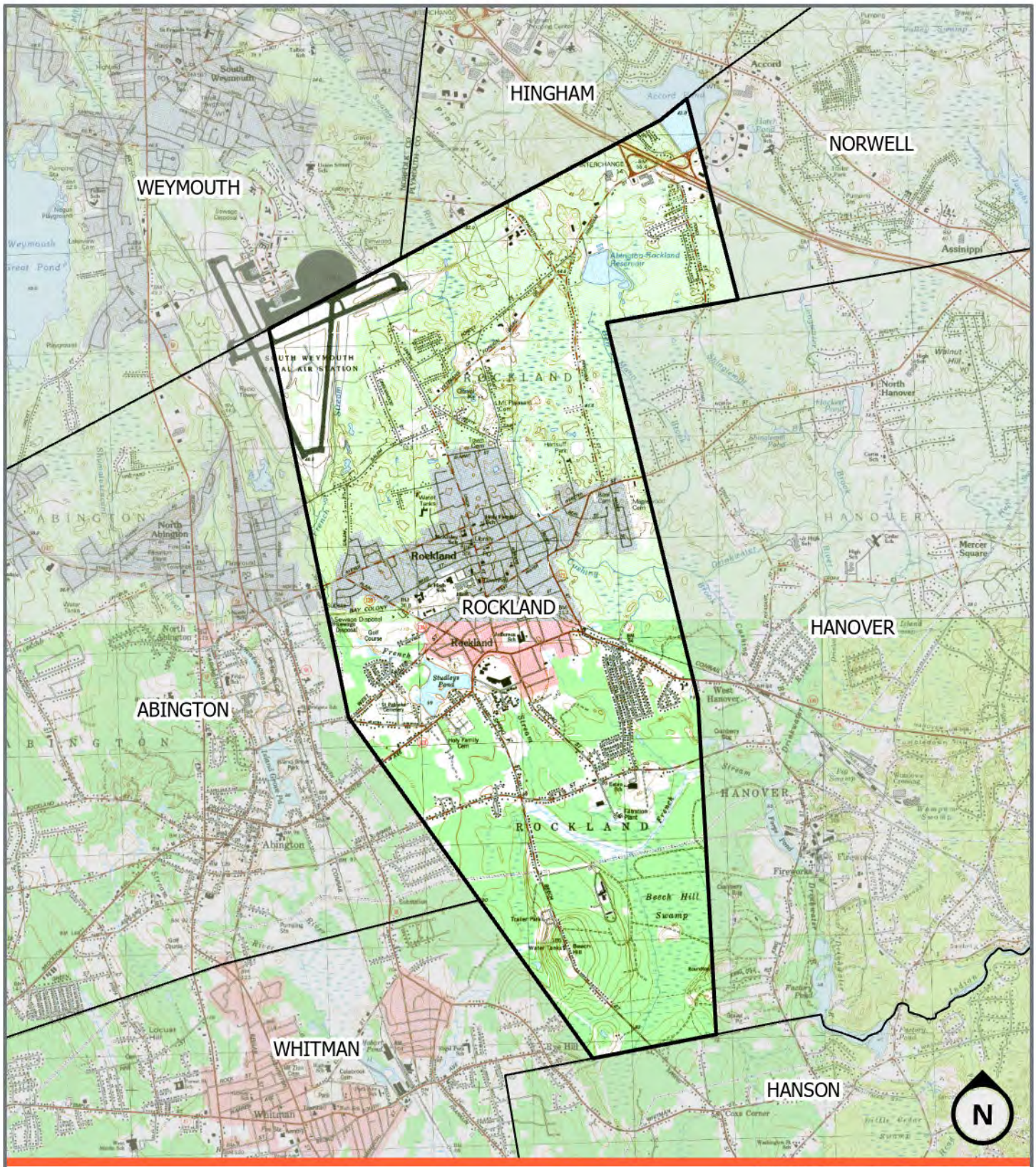
A. Phosphorus
    1. Complete a Phosphorus Source Identification Report within four years of the permit effective date. The report shall include the following elements:
        i. Calculation of total MS4 area draining to the water quality limited water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to part 2.3.4.6
        ii. All screening and monitoring results pursuant to part 2.3.4.7.d, targeting the receiving water segment(s)
        iii. Impervious area and DCIA for the target catchment
        iv. Identification, delineation, and prioritization of potential catchments with high phosphorus loading
        v. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment, including the removal of impervious areas
    2. Submit the final Phosphorus Source Identification Report to EPA as a part of the year 4 annual report.
    3. 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 Source Identification Report that are within the drainage area of the impaired water or its tributaries within five years of the permit effective date.
    4. Provide a listing of planned structural BMPs and a plan and schedule for implementation in the year 5 annual report.
    5. 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.

6. Install the remainder of the structural BMPs in accordance with the plan and schedule provided in the year 5 annual report.
7. 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.

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

FIGURE 1

System Locus



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 1
System Locus
Rockland, Massachusetts

0 5,000 10,000
Feet

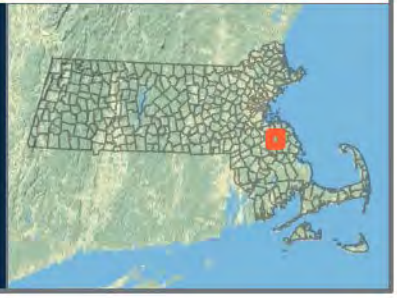
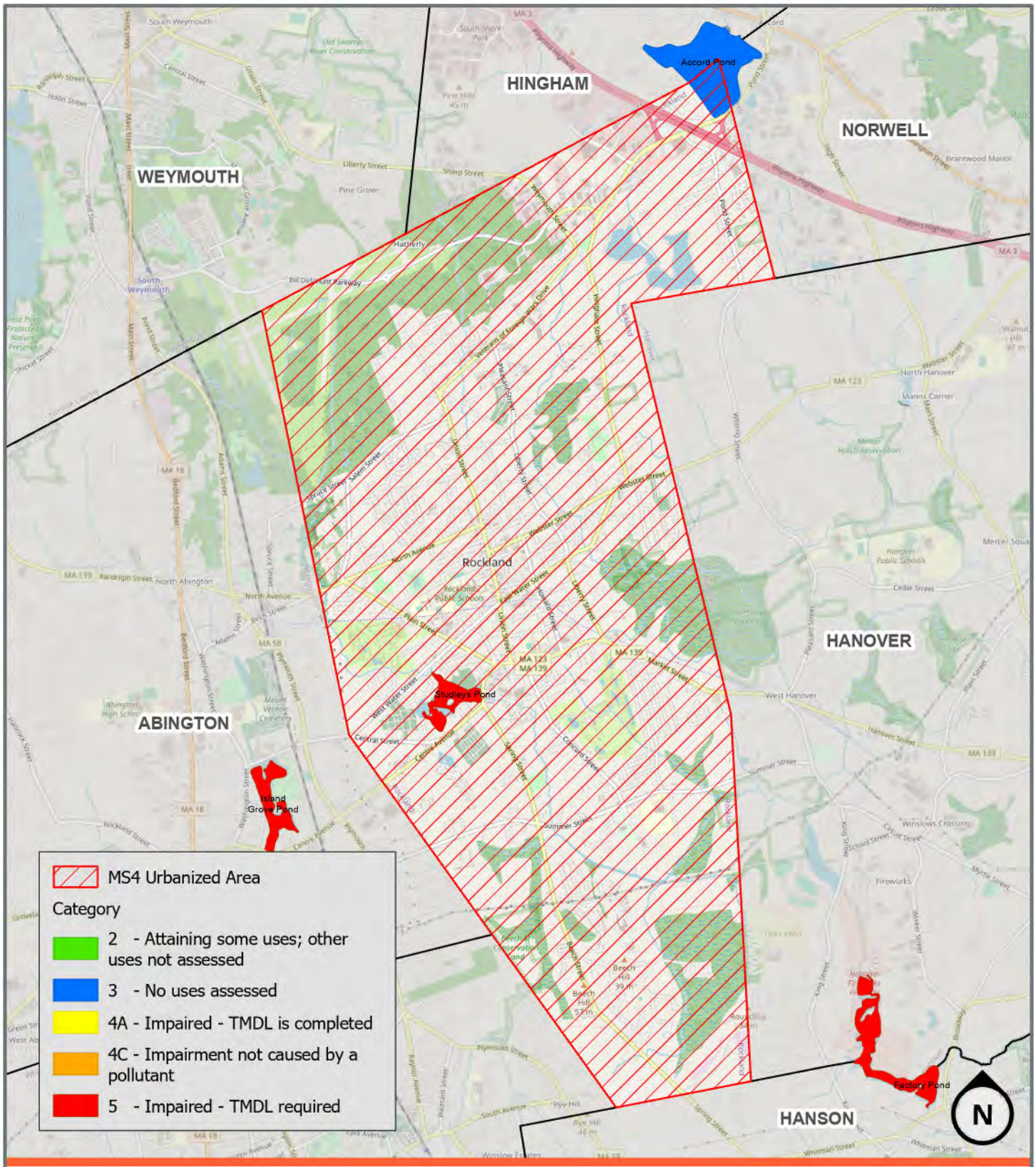


FIGURE 2

MS4 Urbanized Areas



ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2
MS4 Urbanized Areas
Rockland, Massachusetts

0 5,000 10,000
Feet

FIGURE 3

Town Watersheds

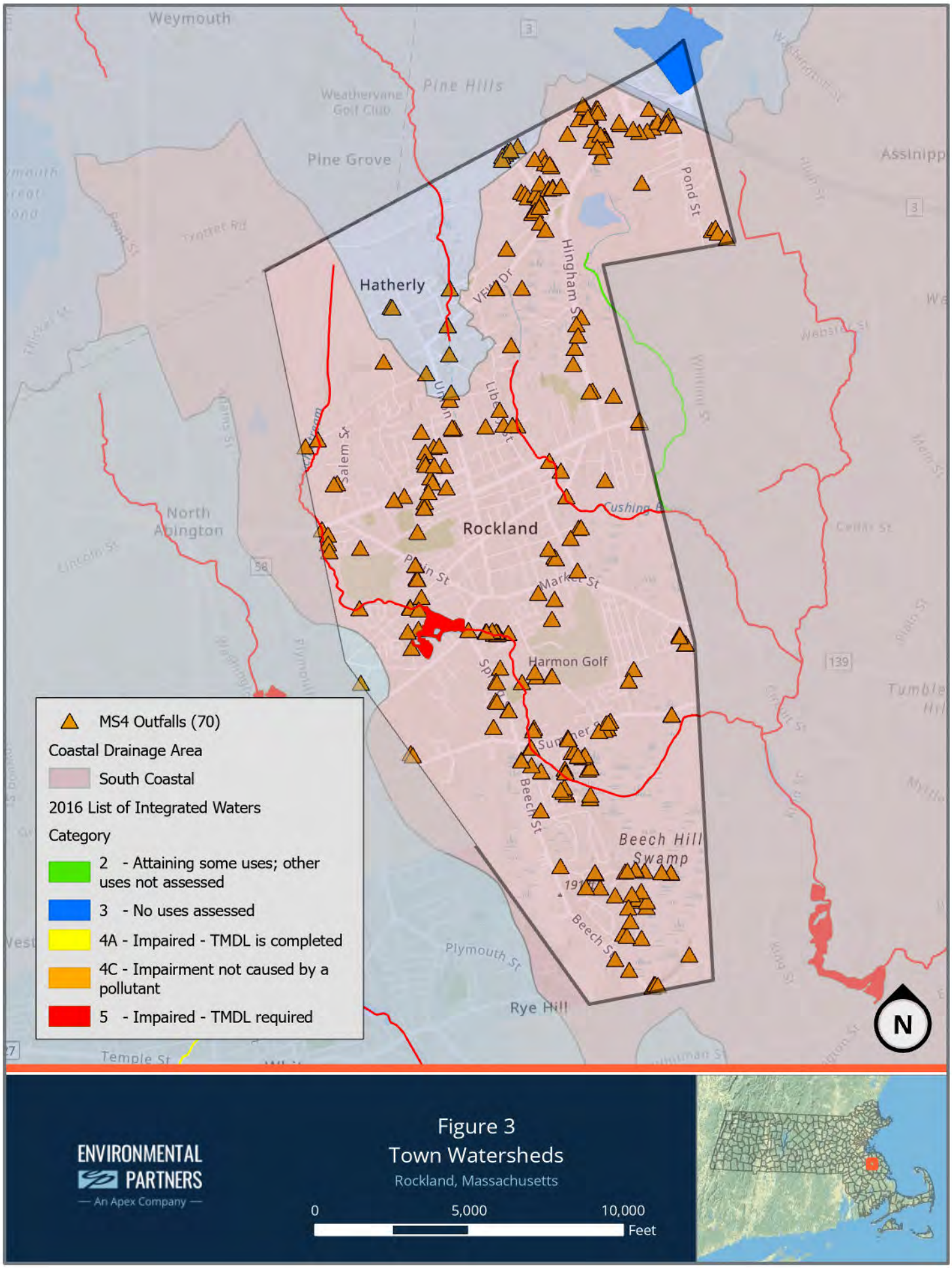
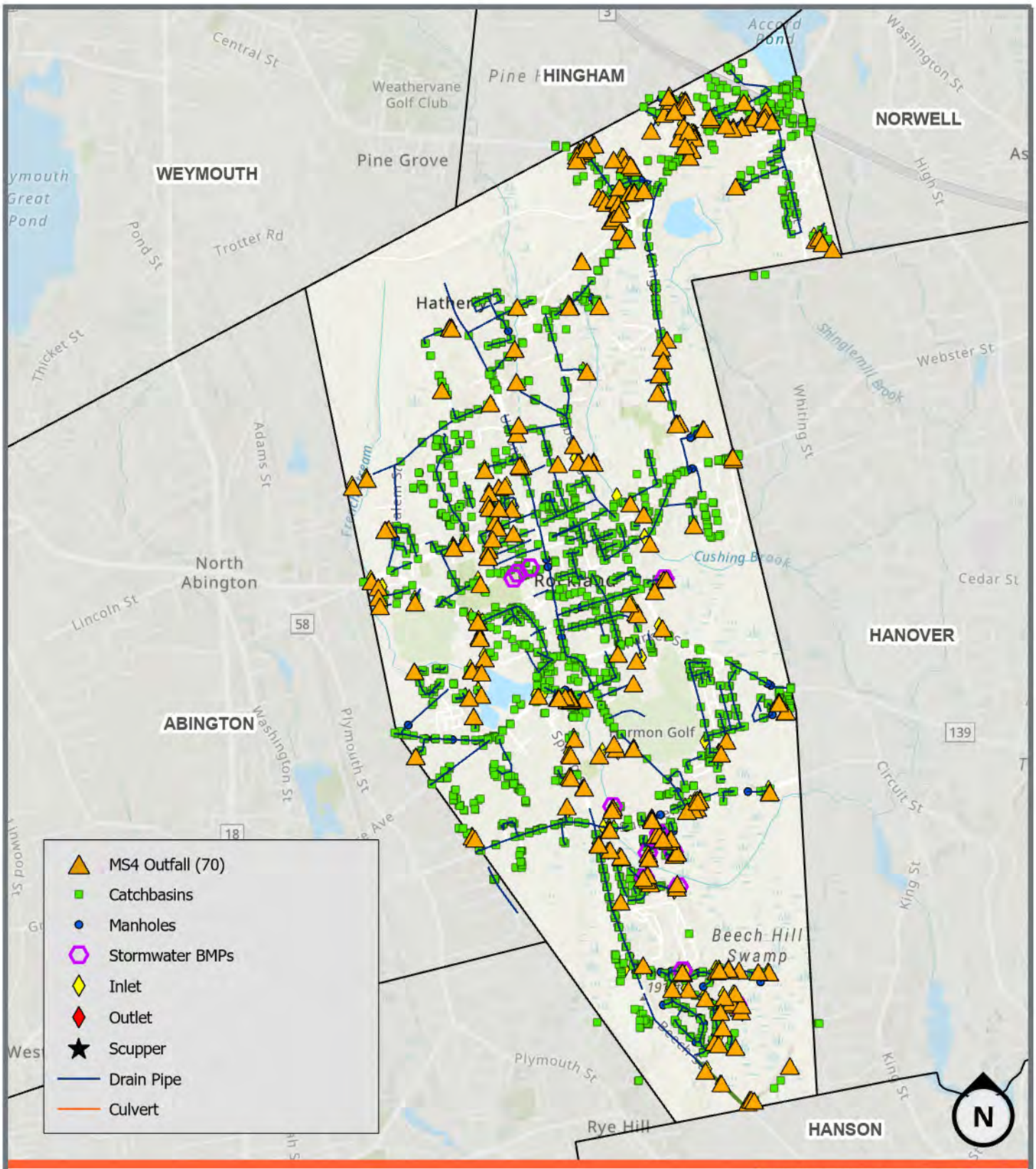

Weymouth
Pine Hills
Weathervane Golf Club
Pine Grove
Assinipp
Hatherly
Rockland
North Abington
Harmon Golf
Beech Hill Swamp
Rye Hill
Plymouth St
Temple St
Hingham St
Pond St
Salem St
Market St
Beech St
MS4 Outfalls (70)
Coastal Drainage Area
South Coastal
2016 List of Integrated Waters
Category
2 - Attaining some uses; other uses not assessed
3 - No uses assessed
4A - Impaired - TMDL is completed
4C - Impairment not caused by a pollutant
5 - Impaired - TMDL required
N
ENVIRONMENTAL PARTNERS
— An Apex Company —
Figure 3
Town Watersheds
Rockland, Massachusetts
0
5,000
10,000
Feet

FIGURE 4

Stormwater System Map



ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 4
Stormwater System
Rockland, Massachusetts

0 5,000 10,000
Feet

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.rockland-ma.gov/

MCM 1: Public Education and Outreach

EPA's Stormwater Education Toolbox
MassDEP's Stormwater Outreach Materials
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 and SOPs
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/npdespermits/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/stormwatertools-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: Rockland State: MA

EPA NPDES Permit Number (if applicable): MA041058

Primary MS4 Program Manager Contact Information

Name: John Loughlin Title: Rockland Sewer Superintendent

Street Address Line 1: 587R Summer Street

Street Address Line 2:

City: Rockland State: MA Zip Code: 02370

Email: jloughlj@yahoo.com Phone Number: (781) 878-1964

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed):

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)

paper maps attached

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): 06/26/03

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): 01/02/04

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): 01/02/04

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

Part II: Summary of Receiving Waters

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

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

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

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Cushing Brook	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
French Stream (MA94-03)	23	☐	☐	☒	☐	☐	☒	☐	☐	☐	Fecal Coliform, Fishes Bioassessments, Whole Effluent Toxicity (WET)
Old Swamp River (MA74-03)	10	☐	☐	☐	☐	☐	☐	☐	☐	☐	Fecal Coliform
Studleys Pond (MA94151)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	Fecal Coliform
Unnamed Pond near Ben Mann Brook (42.16510, -70.90163)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary near French Stream (42.13106, -70.92533)	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary near Studleys Pond (42.12398, -70.92262)	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Ben Mann Brook (42.16395, -70.89642)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Ben Mann Brook (42.16307, -70.89982)	9	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Ben Mann Brook (42.16097, -70.90699)	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Ben Mann Brook (42.13800, -70.89593)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to French Stream (42.12036, -70.90654)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to French Stream (42.11176, -70.89228)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to French Stream (42.11225, -70.91182)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to French Stream (42.10850, -70.90392)	10	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Unnamed Tributary to French Stream (42.09605, -70.89609)	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to French Stream (42.09001, -70.89926)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Old Swamp River (42.14827, -70.92559)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to Cushing Brook (42.14659, -70.90336)	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to French Stream (42.11045, -70.90031)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to French Stream (42.10708, -70.90208)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to French Stream (42.10495, -70.90529)	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to French Stream (42.10733, -70.90912)	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to French Stream (42.09769, -70.89252)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Wetlands to French Stream (42.08902, -70.89759)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	

Click to lengthen table

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

Part III: Stormwater Management Program Summary

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

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

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	**BMP Description**	**Targeted Audience**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal**	**Beginning Year of BMP Imple-mentation**
Brochures/Pamphlets	Publish outreach materials; Distribute New Resident Packets within Wetlands Protection Areas; Distribute pet waste control information; Water department mailings and water quality updates; work with North and South Rivers Watershed Association to develop program	Residents	ConCom, Sewer Dept, Highway, BOH, Planning	Distribute at least two educational messages within permit term (5 Years)	2018
Brochures/Pamphlets	Publish outreach materials; Distribute information to septic maintenance contractors; Include information in permit application materials; Water department mailings and water quality updates; work with North and South Rivers Watershed Association to develop program	Businesses, Institutions and Commercial Facilities	ConCom, Sewer Dept, Highway, BOH, Planning	Distribute at least two educational messages within permit term (5 Years)	2018

Brochures/Pamphlets	Publish outreach materials; Distribute information to septic maintenance contractors; Include information in permit application materials; Water department mailings and water quality updates; work with North and South Rivers Watershed Association to develop program	Developers (construction)	ConCom, Sewer Dept, Highway, BOH, Planning	Distribute at least two educational messages within permit term (5 Years)	2018
Brochures/Pamphlets	Publish outreach materials; Distribute information on industrial groups based on zoning and property use; Water department mailings and water quality updates; work with North and South Rivers Watershed Association to develop program	Industrial Facilities	ConCom, Sewer Dept, Highway, BOH, Planning	Distribute at least two educational messages within permit term (5 Years)	2018
Web Page	Maintain stormwater website; Develop stormwater social media specific account for outreach; Provide outreach materials on website; Consider creating a Town Resident Notification System for stormwater alerts (e.g. severe weather, flooding)	Residents	IT Department, Highway Dept, Sewer Dept	Create and maintain stormwater website	2018

Web Page	Maintain stormwater website; Develop stormwater social media specific account for outreach; Provide outreach materials on website	Businesses, Institutions and Commercial Facilities	IT Department, Highway Dept, Sewer Dept	Create and maintain stormwater website	2018
Web Page	Maintain stormwater website; Develop stormwater social media specific account for outreach; Provide outreach materials on website	Developers (construction)	IT Department, Highway Dept, Sewer Dept	Create and maintain stormwater website	2018
Web Page	Maintain stormwater website; Develop stormwater social media specific account for outreach; Provide outreach materials on website	Industrial Facilities	IT Department, Highway Dept, Sewer Dept	Create and maintain stormwater website	2018

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 Review	Sewer Department, Highway Department	Allow annual review of stormwater management plan and posting of stormwater management plan on website	2018
Public Participation	SWMP Review	Sewer Department, Highway Department	Allow public to comment on stormwater management plan annually	2018
Public Review	Water Quality Testing	Sewer Department, Highway Department	Two rounds of water quality sampling of priority water bodies	2018
Public Participation	Cleanups - Roadside/General	Sewer Department, Highway Department	Annual community cleanup days	2018

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

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
SSO inventory	Develop SSO inventory in accordance of permit conditions	Sewer Department, Highway Department	Complete within 1 year of effective date of permit	2018
Storm sewer system map	Create map and update during IDDE program completion	Sewer Department, Highway Department	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018
Written IDDE program	Create written IDDE program	Sewer Department, Highway Department	Complete within 1 year of the effective date of permit and update as required	2018
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Sewer Department, Highway Department	Complete 10 years after effective date of permit	2018
Employee training	Train employees on IDDE implementation	Sewer Department, Highway Department	Train annually	2018
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Sewer Department, Highway Department	Complete 3 years after effective date of permit	2018
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Sewer Department, Highway Department	Complete 10 years after effective date of permit	2018
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Sewer Department, Highway Department	Complete ongoing outfall screening upon completion of IDDE program	2018
IDDE Regulations	Regulatory revisions and actions	Sewer Dept, Planning Board, Board of Health, Conservation Committee	Review regulations and identify areas for revisions	2018
Permit Enforcement	Local construction site oversight and enforcement	Sewer Dept, Planning Board, Board of Health, Conservation Committee	Continue to enforce local bylaws, state and federal requirements	2018

IDDE Plan - Illegal Dumping Program	Connectivity mapping, bylaw enforcement and fines for misconnection/ illigal dumping	Sewer Department, Highway Department, Board of Health	Continue local bylaw enforcement	2018

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

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Highway Dept, Planning Board, Board of Health, Conservation Committee	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Highway Dept, Planning Board, Board of Health, Conservation Committee	Complete within 1 year of the effective date of permit	2018
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Highway Dept, Conservation Committee	Complete within 1 year of the effective date of permit	2018
Waste Control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Highway Dept, Planning Board, Board of Health, Conservation Committee	Complete within 1 year of the effective date of permit	2018
Construction Standard ESC Specifications and Detailed Drawings	Improve as-built review	Highway Dept, Planning Board	Develop protocol for submitting as-builts electronically and incorporating those files into Town's GIS system	2018
Construction Inspection	Dam inspections	Highway Dept, Sewer, DOT, DCR	Address Phase 1 ODS Report findings and conclusions	2018

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

Part III: Stormwater Management Program Summary (continued)

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

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

Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook	Adoption, amendment, or modification of a regulatory mechanism to meet permit requirements	Highway Dept, Planning Board	Complete 2 years after effective date of permit	2018
Post-Construction Ordinance/Bylaw	Regulatory revisions to bylaws as necessary	Highway Dept, Planning Board, Board of Health, Conservation Committee	Review regulations and identify areas for revisions	2018
Post-Construction Enforcement Procedures	Local construction site oversight and enforcement	Highway Dept, Planning Board, Board of Health, Conservation Committee	Comply with local bylaws	2018

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

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

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

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	Highway Department	Inspect and maintain treatment structures at least annually	2018
Hazardous Waste Collection	Household Hazardous Waste Days as part of South Shore Recycling Cooperative	Highway Department, Conservation Committee, Board of Health	Annual collection	2018
Waterbody Cleanup	Cleaning of Town Streams and Brooks	Highway Department, Conservation Committee, Board of Health	Continue to hire contractor to remove debris from streams and brooks when necessary	2018
Employee Training - General Stormwater Topics	MS4 Permit training seminar attendance	Highway Department	Continue to attend training seminar	2018

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)
South Coastal Watershed (Bacteria/Pathogen)	Adhere to requirements in part A.III of Appendix F	Highway Department, Sewer Department
	Adhere to requirements in part A.I of Appendix F	

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

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

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

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Fecal Coliform	Old Swamp River (MA74-03), French Stream (MA94-03), Studleys Pond (MA94151)	Adhere to requirements in part III of Appendix H	Highway Department, Sewer Dept.
Phosphorus	French Stream (MA94-03)	Adhere to requirements in part II of Appendix H	Highway Department, Sewer Dept.
E. Coli	All discharges in the South Coastal Watershed	Adhere to requirements in part III of Appendix H	Highway Department, Sewer Dept.

Part IV: Notes and additional information

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

Attachments:
Figure: MS4 Outfalls
Figure: Outfalls by Watershed
USFWS Correspondence

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

The Town is recorded as being partially within the Taunton River Watershed, but there are no existing MS4 discharges within the Watershed area that are less than 100 feet from a waterbody at the time of the NOI filing.

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

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 greater than 1 acre. This MS4 Permit will have "no potential to cause effects", in accordance with 36 CFR 800.3(a)(1).

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

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:	Marcia Birmingham	**Title:**	Interim Town Administrator
Signature:	Marcia Birmingham	**Date:**	9/28/18

[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

APPENDIX C

Permit Schedule

MS4 Permit
Draft Schedule
Town of Rockland, Massachusetts

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

- **September 29, 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 – Old Swamp River, French Pond, Studleys Pond
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – French Pond
- 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 – Old Swamp River, French Pond, Studleys Pond
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – French Pond
- Public Participation
- Annual Training

July 2021 – Items due within 3 years of effective date

- Revisions to Stormwater Bylaw - Construction Site Stormwater Runoff Control
- Draft regulations to promote green infrastructure – Post-Construction Management
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- Education/Outreach – Two educational messages to each of the 4 audiences over 5 years
- Additional Education & Outreach (*x2 for Impaired Water Requirements*)**
    - Bacteria: Targeting Dog Waste / Septic Systems – Old Swamp River, French Pond, Studleys Pond
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – French Pond
- Public Participation
- Annual Training

July 2022 – Items due within 4 years of effective date

- Revisions to Stormwater Bylaw - Construction Site Stormwater Runoff Control
- Draft regulations to reduce impervious cover – Post-Construction Management
- Ongoing Outfall Sampling (wet & dry) / Inspections / Update Mapping
- 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 – Old Swamp River, French Pond, Studleys Pond
    - Phosporus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – French Pond
- Phosphorus Source Identification Report**
- 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 – Old Swamp River, French Pond, Studleys Pond
    - Phosphorus: Targeting Fertilizer, Grass Clippings, Dog Waste and Leaf Litter – French Pond
- 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: July 18, 2018
Consultation Code: 05E1NE00-2018-SLI-2424
Event Code: 05E1NE00-2018-E-05631
Project Name: Rockland 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: 05E1NE00-2018-SLI-2424

Event Code: 05E1NE00-2018-E-05631

Project Name: Rockland MS4

Project Type: ** OTHER **

Project Description: Rockland Stormwater

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.128812135921294N70.91381355730039W

Counties: Norfolk, MA | Plymouth, MA

Endangered Species Act Species

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

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

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

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

---

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

Rockland, 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

Sanitary Sewer Overflow (SSO) Inventory
Rockland, MA

Location	Discharge Location	Is Discharge Entering MS4? (Y/N)	Date/Time of SSO Occurance	Estimated Volume of SSO Occurance	Known/Suspected Cause	Mitigation Measures Completed	Mitigation Implementation Date	Mitigation Measures Planned	Mitigation Implementation Schedule
1 Example Rd	Enters into Example Pond	Y	August 4, 2016 9:00 AM - August 5, 2016 3:00 PM	1,200 gallons	Illicit resident connection	Illicit connection removed	August 8, 2016		
42.1076, -70.8992	French's Stream	Y	January 26, 2023 9:00AM – January 27, 2023	>100,000 gallons	Discharge Through Wastewater Outfall				
42.1076, -70.8992	French's Stream	Y	March 14, 2023 7:30- March 15, 2023 4:00	1,812,515 gallons	Discharge Through Wastewater Outfall				

*The SSO occurrence listed first in the table is an example

APPENDIX H

Current Stormwater Bylaws

Table of Contents

ARTICLE I – GENERAL PROVISIONS

Section 1. Purpose and Objective
Section 2. Definitions
Section 3. Authority
Section 4. Responsibility for administration
Section 5. Waiver
Section 6. Regulation
Section 7. Severability

ARTICLE II – DISCHARGES TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM AND TO WATERCOURSES OR WATERS OF THE COMMONWEALTH

Section 1. Applicability
Section 2. Prohibited activities; exemptions.
Section 3. Additional Prohibited Pollutants
Section 4. Emergency suspension of storm drainage system access.
Section 5. Notification of spills
Section 6. Enforcement
Section 7. Transitional provisions

ARTICLE III STORMWATER MANAGEMENT AND LAND DISTURBANCE

Section 1. Applicability
Section 2. Approval and/or Permit
Section 3. Entry
Section 4. Inspection and Site Supervision
Section 5 Compliance with the provisions of the United States Environmental Protection Agency's (EPAs) General Permit for Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts
Section 6. Surety
Section 7. Final Reports
Section 8. Enforcement

ARTICLE I – GENERAL PROVISIONS

Section 1. Purpose and Objective

A. The purpose of this bylaw is to protect the health, safety, general welfare, and environment by regulating illicit connections and discharges to the storm drain system or, directly or indirectly, to a watercourse or into the waters of the Commonwealth, as well as to control the adverse effects of construction site stormwater runoff and post-construction runoff. Stormwater runoff is potentially a major cause of:

(1) Impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands, groundwater and drinking water supplies;
(2) Contamination of drinking water supplies;
(3) Contamination of downstream coastal areas;
(4) Alteration or destruction of aquatic and wildlife habitat;
(5) Overloading or clogging of municipal stormwater management systems; and
(6) Flooding.

B. The objectives of this bylaw are:

(1) Protect water resources;
(2) Comply with state and federal statutes and regulations relating to stormwater discharges including total maximum daily load requirements;
(3) To prevent pollutants from entering the Town's municipal separate storm sewer system (MS4) and reduce or eliminate pollutants entering the Towns MS4 from existing uses;
(4) To prohibit illicit connections and unauthorized discharges to the MS4 and require their removal;
(5) To establish minimum construction and post construction stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;
(6) To establish provisions for the long-term responsibility for, and maintenance of, structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed are maintained, and pose not treat to public safety; and
(7) To establish the Town of Rockland's legal authority to ensure compliance with the provisions of this bylaw through inspection, monitoring, and enforcement.

Section 2. Definitions

Unless a different definition is indicated in other sections of this bylaw, the following definitions and provisions shall apply throughout this bylaw:

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

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

ALTERATION OF DRAINAGE CHARACTERISTICS: Any activity on an area of land that

changes the water quality, force, direction, timing or location of runoff flowing from the area. Such changes include: change from distributed runoff to confined, discrete discharge, change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area.

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

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

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

CLEARING: Any activity that removes the vegetative surface cover

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

DISCHARGE OF POLLUTANTS: The addition from any source of any pollutant or combination of pollutants into the municipal storm drain system or into the waters of the United States or commonwealth from any source.

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

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

EROSION CONTROL: The prevention or reduction of the movement of soil particles or rock fragments due to stormwater runoff.

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

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

GRADING: Changing the level or shape of the ground surface.

GROUNDWATER: Water beneath the surface of the ground.

GRUBBING: The act of clearing land surface by digging up roots and stumps.

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

ILLICIT DISCHARGE - Direct or indirect discharge to the municipal storm drain system or into a watercourse or the waters of the Commonwealth that is not composed entirely of

stormwater, except as exempted in s. X. The term does not include a discharge in compliance with an NPDES stormwater discharge permit or resulting from fire-fighting activities exempted pursuant to § X of this bylaw.

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

IMPOUNDMENT: A stormwater pond created by either constructing an embankment or excavating a pit which retains a permanent pool of water.

INFILTRATION: The act of conveying surface water into the ground to permit groundwater recharge and the reduction of stormwater runoff from a project site.

LAND-DISTURBING ACTIVITY: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material***;*** results in an increased amount of runoff or pollutants; measurably changes the ability of a ground surface to absorb waters, involves clearing and grading, or results in an alteration of drainage characteristics.

LOAD ALLOCATION – The maximum concentration or mass of a pollutant which can be discharged to a waterway non-point sources without causing a violation of surface water quality standards as established in an applicable TMDL.

MASSACHUSETTS ENDANGERED SPECIES ACT: (G.L. c. 131A) and its implementing regulations at (321 CMR 10.00) which prohibit the "taking" of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS: The Stormwater Standards as further defined by the Massachusetts Stormwater Handbook both issued by the Department of Environmental Protection, and as amended, that coordinate the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 §. 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Standards address stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

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

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGE PERMIT - A permit issued by United States Environmental Protection Agency or jointly with the Commonwealth of Massachusetts that authorizes the discharge of pollutants to waters of the United States.

NONSTORMWATER DISCHARGE - Discharge to the municipal storm drain system not composed entirely of stormwater.

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

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

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

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

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

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

PRE-CONSTRUCTION: All activity in preparation for construction.

POLLUTANT - Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter, whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the commonwealth. Pollutants shall include without limitation:

A. Paints, varnishes, and solvents;
B. Oil and other automotive fluids;
C. Nonhazardous liquid and solid wastes and yard wastes;
D. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnance, accumulations and floatables;
E. Pesticides, herbicides, and fertilizers;
F. Hazardous materials and wastes; sewage, fecal coliform and pathogens;
G. Dissolved and particulate metals;
H. Animal wastes;
I. Rock; sand; salt; soils;
J. Construction wastes and residues; and
K. Noxious or offensive matter of any kind.

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

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

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

REDEVELOPMENT: Development, rehabilitation, expansion, demolition or phased projects that disturb the ground surface, including impervious surfaces, on previously developed sites. The creation of new areas of impervious surface or new areas of land disturbance on a site constitutes development, not redevelopment, even where such activities are part of a common plan which also involves redevelopment. Redevelopment includes maintenance and improvement of existing roadways including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems and repaving; and remedial projects specifically designed to provide improved stormwater management such as projects to separate storm drains and sanitary sewers and stormwater retrofit projects.

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

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

SEDIMENTATION: The process or act of deposition of sediment.

SITE: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

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

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

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

STORMWATER AUTHORITY – Town of Rocklands Board of Selectman or its authorized agent(s).

STORMWATER - Runoff from precipitation or snow melt and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan required as part of the application for a Stormwater Management Permit.

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

TOTAL MAXIMIM DAILY LOAD or TMDL – A plan required under the Clean Water Act for a pollutant which causes or contributes to a violation of state surface water quality standards in a specific geographic area, and which establishes the maximum amount of that pollutant (referred to as the load allocation and waste load allocation) which may be discharged to the affected waters of the Commonwealth by one or more categories of users without violating state surface water quality standards.

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

substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as "toxic" or "hazardous" under MGL c. 21C and c. 21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

TSS: Total Suspended Solids**.**

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

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

WASTE LOAD ALLOCATION – The maximum concentration or mass of a pollutant which can be discharged to a waterway from point sources without causing a violation of surface water quality standards as established in an applicable TMDL.

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

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

WETLAND RESOURCE AREA: Areas specified in the Massachusetts Wetlands Protection Act G.L. c. 131, § 40 and in the Town of Rockland Wetlands Protection Bylaw.

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

Section 3. Authority

This bylaw is adopted under authority granted by the Home Rule Amendment of the Massachusetts Constitution, the home rule statutes, the regulations of the Federal Clean Water Act found at 40 CFR 122.34, Chapter 1, § 1-2 of the General Bylaws of the Town of Rockland.

Section 4. Responsibility for administration

A. Stormwater Authority shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon Stormwater Authority may be delegated in writing by Stormwater Authority to its employees or agents.

Section 5. Waivers

A. Following a public hearing on a waiver request, the Stormwater Authority may waive strict compliance with any requirement of this bylaw or the rules and regulations promulgated hereunder, where:

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

(2) is in the public interest; and

(3) is not inconsistent with the purpose and intent of this bylaw.

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

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

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

Section 6. Regulations

The Stormwater Authority may adopt, and periodically amend, regulations, rules and/or written guidance relating to the terms, conditions, definitions, enforcement, fees, procedures and administration of this Stormwater Bylaw by majority vote after conducting a public hearing to receive comments. Such hearing shall be advertised in a newspaper of general local circulation, at least fourteen (14) days prior to the hearing date. Failure of the Stormwater Authority to issue such rules, or regulations, or a legal declaration of their invalidity by a court, shall not act to suspend or invalidate the effect of this Bylaw.

Such regulations, rules or guidance may include without limitation, provisions for the establishment of one or more categories of administrative review approvals for specific types or sizes of projects. Administrative review applications that meet all the standard requirements may be issued by one or more agents designated in writing by the Stormwater Authority, without the requirement for a public hearing as detailed in Article III of this bylaw. Administrative review approval shall comply with all other provisions of this Bylaw.

Section 7. Severability

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

ARTICLE II – DISCHARGES TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM AND TO WATERCOURSES OR WATERS OF THE COMMONWEALTH

Section 1. Applicability

Article II of this bylaw shall apply to all water entering the municipally owned storm drainage system or going, directly or indirectly, into a watercourse or waters of the Commonwealth, that will be generated on any developed or undeveloped lands except as explicitly exempted in this bylaw or where the Stormwater Authority has issued a waiver in accordance with Article I Section 5.

Section 2. Prohibited activities; exemptions.

A. Illicit discharges. No person shall dump, discharge, spill, cause or allow to be discharged any pollutant or nonstormwater discharge into the municipal separate storm sewer system (MS4), onto an impervious surface directly connected to the MS4, or directly or indirectly, into a watercourse or waters of the Commonwealth.

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

C. Obstruction of municipal storm drain system. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drain system without prior consent from the Stormwater Authority.

D. Exemptions.

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

(2) The following non-stormwater discharges or flows are exempt from the prohibitions of non-stormnwater provided that the source is not a significant contributor of a pollutant to the municipal storm drain system or, directly or indirectly, to a watercourse or waters of the Commonwealth:

(a) Waterline flushing;

(b) Flow from potable water sources, with the exception of landscape irrigation and lawn watering;

(c) Springs;

(d) Natural flow from riparian habitats and wetlands;

(e) Diverted stream flow;

(f) Rising groundwater;

(g) Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater (e.g. sump pump), provided that where a pump intake exists inside a structure, the operator seeks a permit from the Stormwater Authority prior to discharge and thereafter discharges in accordance with the requirements of the permit and applicable laws and regulations to be issued by the Commission;

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

(i) Discharge from dechlorinated swimming pool water (less than one ppm chlorine) provided the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;

(j) Discharge from street sweeping;

(k) Dye testing, provided verbal notification is given to the Stormwater Authority prior to the time of the test;

(l) Nonstormwater discharge permitted under an NPDES permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and

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

Section 3. Additional Prohibited Pollutants

A. Pet Waste: Rockland is subject to a Bacteria TMDL, and because dog feces are a major component of stormwater pollution, it shall be the duty of each person who owns, possesses, or controls a dog to remove and properly dispose of any feces left by the dog on any public or private property neither owned nor occupied by said person. It is prohibited to dispose of dog feces in any public or private storm drain, catch basin, wetland or water body or on any paved or impervious surface. However, this provision shall not be applicable to a person using a helping dog or other helping animal registered as such. Persons walking dogs must carry with them a device designed to dispose of dog feces including, but not limited to, a plastic bag or "pooper scooper." For specific requirements and penalties for violations see General Bylaw Chapter 184 Animals**.**

B. Pavement Sealers: Coal tar based driveway and pavement sealers have been identified as a primary source of poly-aromatic hydrocarbons affecting streams in developed areas. Poly-aromatic hydrocarbons are classified by the US Environmental Protection Agency as a probable human carcinogen and are highly toxic to aquatic life. Asphalt-based driveway and pavement sealers contain low concentrations of poly-aromatic hydrocarbons. Therefore, application of coal tar based driveway and pavement sealers is prohibited for all paved areas directly connected to the MS4.

Section 4. Emergency suspension of storm drainage system access

The Stormwater Authority may suspend municipal storm drain system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened discharge of pollutants that presents imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency

suspension order, the Stormwater Authority may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

Section 5. Notification of spills

Notwithstanding other requirements of local, state or federal law, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of pollutants to the municipal drainage system or waters of the Commonwealth, the person shall take all necessary steps to ensure containment and cleanup of the release. In the event of a release of oil or hazardous materials, the person shall immediately notify the Municipal Fire and Police Departments. In the event of a release of nonhazardous material, the reporting person shall notify the authorized enforcement agency no later than the next business day. The reporting person shall provide to the Stormwater Authority written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

Section 6. Enforcement

The Stormwater Authority or its authorized agent shall enforce this bylaw, and any associated regulations, orders, violation notices, and enforcement orders and may pursue all civil and criminal remedies for such violations.

A. Civil relief. If a person violates the provisions of this bylaw, or any associated regulations, permit, notice, or order issued thereunder, the Stormwater Authority may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

B. Orders.

(1) The Stormwater Authority or its authorized agent may issue a written order to enforce the provisions of this bylaw or any regulations thereunder, which may include:

(a) Elimination of illicit connections or discharges to the MS4;

(b) Elimination of discharges to the MS4 or, directly or indirectly, into a watercourse or into the waters of the Commonwealth.

(c) Performance of monitoring, analyses, and reporting;

(d) That unlawful discharges, practices, or operations shall cease and desist;

(e) That measures shall be taken to minimize the discharge of pollutants until such time as the illicit connection shall be eliminated; and

(f) Remediation of contamination in connection therewith.

(2) If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that,

should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town may, at its option, undertake such work, and expenses thereof shall be charged to the violator.

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

C. Criminal penalty. Any person who violates any provision of this bylaw, regulation, order or permit issued thereunder shall be punished by a fine of not more than $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

D. Noncriminal disposition. As an alternative to criminal prosecution or civil action, the Town may elect to utilize the noncriminal disposition procedure set forth in MGL c. 40, § 21D and § 1-6 of the Town of Rockland General Bylaws, in which case the agent of the Stormwater Authority shall be the enforcing person. The penalty for the first violation shall be a warning. The penalty for the second violation shall be $100. The penalty for the third and subsequent violations shall be $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

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

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

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

Section 7. Transitional provisions

Residential property owners shall have 60 days from the effective date of this bylaw to comply with its provisions provided good cause is shown for the failure to comply with the bylaw during that period.

ARTICLE III – STORMWATER MANAGEMENT AND LAND DISTURBANCE

Section 1. Applicability

No person may undertake a construction activity or land disturbance, including clearing, grading, excavation or redevelopment that will disturb equal to or greater than thresholds outlined in the Town of Rockland Stormwater Regulations (Regulations) without a written approval or a permit from the Stormwater Authority or as otherwise provided in this bylaw.

Any person that fails to follow the requirements of a Stormwater Management Permit and the related Erosion and Sedimentation Control Plan, and Operations and Maintenance Plan issued under the Stormwater Management Regulations shall be in violation of the Town of Rockland Bylaws.

Section 2. Approval and/or Permit

An applicant seeking an approval and/or permit shall file an appropriate application with the Stormwater Authority in a form and containing information as specified in this bylaw and in regulations adopted by the Stormwater Authority. Approval or permit must be obtained prior to the commencement of land disturbing or redevelopment activity based on thresholds described in the Stormwater Regulations.

Section 3. Entry

Filing an application for an approval or permit grants the Stormwater Authority and its employees or agent's permission to enter the site to verify the information in the application and to inspect for compliance with approval or permit conditions.

Section 4. Inspection and Site Supervision

The Stormwater Authority or its designated agent shall make inspections as outlined in the Regulations to verify and document compliance the Stormwater Management Permit.

Section 5. Compliance with the provisions of EPAs General Permit for MS4s in Massachusetts

This Bylaw shall be implemented in accordance with the requirements of EPAs most recent General Permit for MS4s in Massachusetts relating to illicit connections and discharges, construction site runoff, and post-construction stormwater management. The Stormwater Authority shall include these requirements in any Regulations that it issues. The Stormwater Authority may establish additional requirements by Regulation to the further the purposes and objectives of this Bylaw so long as they are not less stringent than those in the MS4 General Permit for Massachusetts.

Section 6. Surety

The Stormwater Authority may require the applicant to post before the start of land disturbance or construction activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by the Stormwater Authority and be in an amount deemed sufficient by the Stormwater Authority to ensure that the work will be completed

in accordance with the permit. If the project is phased, the Stormwater Authority may release part of the bond as each phase is completed in compliance with the permit.

Section 7. Final Reports

Upon completion of the work, the applicant shall submit a report (including certified as-built construction plans) from a Professional Engineer (P.E.), surveyor, or Certified Professional in Erosion and Sedimentation Control (CPESC), certifying that all erosion and sedimentation control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved Erosion and Sediment Control Plan and Stormwater Management plan. Any discrepancies shall be noted in the cover letter.

Section 8. Enforcement

The Stormwater Authority or its authorized agent shall enforce this bylaw, and any associated regulations, orders, violation notices, and enforcement orders and may pursue all civil and criminal remedies for such violations.

A. Civil relief. If a person violates the provisions of this bylaw, or any associated regulations, permit, notice, or order issued thereunder, the Stormwater Authority may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

B. Orders. If the Stormwater Authority determines that a person's failure to follow the requirements of a Stormwater Management Permit and the related Erosion and Sedimentation Control Plan, or Operations and Maintenance Plan then the Authority may issue a written order to the person to remediate the adverse impact, which may include:

    (1) A requirement to cease and desist from the land-disturbing activity until there is compliance with the bylaw and provisions of the Stormwater Management Permit

    (2) Maintenance, installation or performance of additional erosion and sediment control measures;

    (3) Monitoring, analyses, and reporting

    (4) Remediation of erosion and sedimentation resulting directly or indirectly from the land-disturbing activity.

    (5) A requirement to eliminate discharges, directly or indirectly, into a watercourse or into the waters of the Commonwealth.

C. If the Stormwater Authority determines that abatement or remediation of pollutant is required, the order shall set forth a deadline for completion of the abatement or remediation. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the town may, at its option, undertake such work, and expenses thereof shall be charged to the violator or property owner. Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be

notified of the costs incurred by the town, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Stormwater Authority within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Stormwater Authority affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the cost shall become a special assessment against the property owner of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in G.L. Chapter 59, s 57 after the thirtieth (30) day at which the costs first become due.

D. Criminal and Civil Penalties. Any person who violates any provision of this bylaw, valid regulation, or the terms or conditions in any permit or order prescribed or issued there under, shall be subject to a fine not to exceed three hundred dollars ($300.00) for each day such violation occurs or continues or subject to a civil penalty, which may be assessed in an action brought on behalf of the town in any court of competent jurisdiction.

E. Noncriminal disposition. As an alternative to criminal prosecution or civil action, the Town may elect to utilize the noncriminal disposition procedure set forth in MGL c. 40, § 21D and Chapter 1, § 1-4 of the Town of Rockland General Bylaws, in which case the agent of the Stormwater Authority shall be the enforcing person. The penalty for the first violation shall be a warning. The penalty for the second violation shall be $100. The penalty for the third and subsequent violations shall be $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

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

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

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

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 Rockland

EPA NPDES Permit Number: MAR041058

Primary MS4 Program Manager Contact Information

Name: John Loughlin Title: Sewer Superintendent

Street Address Line 1: 587R Summer Street

Street Address Line 2:

City: Rockland State: MA Zip Code: 02370

Email: jloughlj@yahoo.com Phone Number: (781) 878-1964

Fax Number: (781) 871-1901

Stormwater Management Program (SWMP) Information

SWMP Location (web address):

Date SWMP was Last Updated: Jun 15, 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:

SWMP is located at the Highway Department (841 Market Street, Rockland MA 02370) and the Sewer Department (587R Summer Street Rockland, MA 02370); was made available June 15, 2019.

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)*

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

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

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

In Year 2, The North South River Watershed Association (NSRWA) on behalf of the Town will conduct the following outreach:
- Distribute septic maintenance information via press release, social media post, web page and brochure (Appendix F Requirement)
- Distribute leaf litter information in Fall (Appendix H Requirement)

In Year 3, The NSRWA on behalf of the Town will conduct the following outreach:
- Pet waste handout given at at the time of dog licensing (Appendix F)

Part III: Receiving Waters/Impaired Waters/TMDL

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

Yes ☐ No ☒

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

N/A

Part IV: Minimum Control Measures

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

MCM1: Public Education

Number of educational messages completed during the reporting period: 8

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: Gardening Green Expo

Message Description and Distribution Method:

Gardening Green Expo - Regional event for WaterSmart South Shore Communities that provides information about how residents can reduce stormwater pollution from better landscaping practices. A press release went out to the Town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. Information about the event went out in the North South River Watershed Association (NSRWA) E-newsletter 4 times to 6,000+ subscribers each time. The videos of the speakers were added to the NSRWA website and shared online and on Facebook.

Targeted Audience: Residents

Responsible Department/Parties: North South River Watershed Association (NSRWA)

Measurable Goal(s):

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

There were 500 regional guests in attendance.

Message Date(s): February 28, 2019

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

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

If yes, describe why the change was made:

This outreach opportunity was developed by the NSRWA on behalf of the Town of Rockland to add to the outreach detailed on the NOI.

BMP: Regional Rain Barrel Sale

Message Description and Distribution Method:

Regional Rain Barrel Sale - Education about water conservation and the reduction of stormwater from impervious surfaces. A press release to went out to the Town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. Information about the sale went out in the NSRWA E-newsletter to 6,000+ subscribers.

Targeted Audience: Residents

Responsible Department/Parties: NSRWA

Measurable Goal(s):

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

There were 6 rain barrels sold in Rockland; there were 1,352 web page views on the NSRWA and 213 on their Rain Barrel and Composter page.

Message Date(s): April 2, 2019

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

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

If yes, describe why the change was made:

This outreach opportunity was developed by the NSRWA on behalf of the Town of Rockland to add to the outreach detailed on the NOI.

BMP: Greenscapes Guide

Message Description and Distribution Method:

Greenscapes Guide - Digital download of landscaping techniques that reduce stormwater pollutants (fertilizers, pesticides, herbicides). It was promoted online and on the NSRWA Facebook page with a reach of 2,831 people and 187 engagements.

Targeted Audience: Residents

Responsible Department/Parties: NSRWA

Measurable Goal(s):

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

No downloads occurred from Rockland during this reporting period.

Message Date(s): May 22, 2019

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

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

If yes, describe why the change was made:

BMP: Spring Annual Messaging

Message Description and Distribution Method:

Grass Clippings and Fertilizer Messaging for May - Facebook post with $50 ad boost.

Targeted Audience: Residents

Responsible Department/Parties: NSRWA

Measurable Goal(s):

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

The grass clippings message had a reach of 11,034 people and 472 engagements, regionally. The fertilizer message had a reach of 2,376 people and 239 engagements. Both messages were posted to the Rockland Hub Facebook page. The grass clippings Facebook post was boosted in June with a $50 ad targeted to all WaterSmart towns with a reach of 9,678 and 266 engagements, and a $50 ad targeted to Rockland with a reach of 2,749 and 607 engagements.

Message Date(s): May 22, 2019; May 28, 2019

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

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

If yes, describe why the change was made:

BMP: Pet Waste Education/Summer Annual Messaging

Message Description and Distribution Method:

Pet Waste Education - Printed Scoop It cards, web article, press release, and social media posts for June. Pet waste Scoop It cards were distributed to the town clerk's office (100), Hair Club for Pets (100), and For Your Paws Only Grooming (100). An article was written on The Problem of Dog Waste on the South Shore. This was sent to the Globe, the Patriot Ledger, Wicked Local. A press release to went out to Rockland, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. The Patriot Ledger wrote a feature on it from the NSRWA press release, and WATD did an on-air interview. It was posted on the NSRWA Facebook page with a reach of 1,556 people and 197 engagements, and on the Rockland Hub Facebook page. Summer annual messaging about proper management of pet waste.

Targeted Audience: Residents

Responsible Department/Parties: NSRWA

Measurable Goal(s):

Distribute annual messaging in accordance with the Town's Bacteria & Pathogen impairment and TMDL and Phosphorus impairment.

453 regional web page views on The Problem of Dog Waste on the South Shore; 22 web page views on Pet Waste Education page; 202 web page views on Addressing the Elephant in the Room - Dog Waste on the South Shore.

Message Date(s): June 13, 2019

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

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

If yes, describe why the change was made:

BMP: School Program

Message Description and Distribution Method:

School Program on stormwater and conservation messaging - Groundwater model, watershed model and cleaning dirty water taught to elementary school students and parent volunteers in school program. The program ran for two (2) days and there were 138 students and 24 parent volunteers. A press release to went out to the town, the Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard.

Targeted Audience: Residents

Responsible Department/Parties: NSRWA

Measurable Goal(s):

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

In a sample survey, 85% of the students and 80% of the parents reported having a greater understanding of where their water comes from AFTER the program, 85% of the students and 80% of the parents reported having a greater understanding of the importance of conserving water AFTER the program, and 80% of the students and parents reported having a greater understanding of how pollutants and runoff affect the quality of water AFTER the program.

Message Date(s): June 10, 2019

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

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

If yes, describe why the change was made:

This outreach opportunity was developed by the NSRWA on behalf of the Town of Rockland to add to the outreach detailed on the NOI.

BMP: Fowl Water Campaign

Message Description and Distribution Method:

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

Targeted Audience: Residents

Responsible Department/Parties: NSRWA

Measurable Goal(s):

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

10,493 people reached on Facebook/Instagram; 9,251people reached on YouTube.

Message Date(s): June 23, 2019 - July 12, 2019

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

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

If yes, describe why the change was made:

This outreach opportunity was developed by the NSRWA and ThinkBlue on behalf of the Town of Rockland to add to the outreach detailed on the NOI.

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 and public comment of the SWMP; MS4 permit meeting held on 6/26/2019.

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:

Sponsored annual community cleanup days (April 13, 2019)

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: 0

Number of SSOs removed: 0

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: 0

Total number of SSOs removed: 0

MS4 System Mapping

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

Previously for Phase 1 mapping, Rockland updated its outfalls and receiving waters, updated its water bodies identified by name and indication of all use impairments and preformed initial catchment delineations.

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: 38%

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:

N/A -- No IDDE investigations conducted.

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:

Rockland has hired a consulting firm to conduct IDDE investigations during fiscal year 2020. For 51 MS4 outfalls (out of the Town's 133 outfalls), the firm will conduct dry weather screening and record information including outfall diameter, material, condition, storm sewer connectivity and receiving water, and flow and sediment descriptions. For 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 will be tested, as well as additional parameters required based on waterbody or watershed impairments and TMDLs.

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: 5

Number of inspections completed: 5

Number of enforcement actions taken: 0

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:

None to date.

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:

None to date.

Street Design and Parking Lots Report

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

None to date.

Green Infrastructure Report

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

None to date.

Retrofit Properties Inventory

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

None to date.

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

During Year 1 of this Permit, the Town evaluated its current catch basin cleaning schedule and procedure. Duri

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: 600

Number of catch basins cleaned: 500

Total volume or mass of material removed from all catch basins: 100 Tons

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

Total number of catch basins: 1833

If applicable:

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

Increase frequency of cleanings and inspections.

Street Sweeping

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

Being drafted.

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

- ○ Number of miles cleaned: 150 miles (including
- ○ Volume of material removed: [UNITS]
- ◉ Weight of material removed: 110 Tons

If applicable:

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

The process follows sweeping procedures.

Winter Road Maintenance

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

Being drafted.

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:

Will begin drafting in Spring of 2020.

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:

Being drafted.

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:

Being drafted.

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:

Being drafted.

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:

A consulting company was hired to review and provide recommendations on Rockland's existing stormwater bylaws, including Construction/Post-Cnstruction Site Stormwater Runoff Control and Illicit Discharge Detection and Elimination (IDDE) bylaws. Additionally, the consulting company has updated the Town's SWMP.

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:

Rockland has hired a consulting company to complete the required Year 2 SOPs, BMP site visits and inspections and IDDE investigations.

The Town will continue to work with the North South River Watershed Association on education and outreach opportunities.

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 Rockland

EPA NPDES Permit Number: MAR041058

Primary MS4 Program Manager Contact Information

Name: Dave Taylor Title: Highway Superintendent

Street Address Line 1: 841 Market Street

Street Address Line 2:

City: Rockland State: MA Zip Code: 02370

Email: dtaylor@rockland-ma.gov Phone Number: (781) 878-0634

Stormwater Management Program (SWMP) Information

SWMP Location (web address):

Date SWMP was Last Updated: September 2020

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

SWMP is located at the Highway Department (841 Market Street, Rockland MA 02370) and the Sewer Department (587R Summer Street Rockland, MA 02370); it was made available to the public on June 15, 2019.

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:

Written operation and maintenance plan, inventory of facilities, written program for MS4 infrastructure maintenance, and SWPPPs were all started during Year 2 and have since been finished; the field work needed to complete this work was delayed due to COVID-19 concerns. The SWMP will be updated in Year 3 to

include the reports developed during Year 2.

Annual Requirements

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

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

In Year 3, on behalf of Rockland the NSRWA will be completing the following outreach:

- Pet waste handout/mailer to go with dog licensing & distributed at local veterinarian offices and local pet stores & WaterSmart website (Appendices F and H requirement). This was intended to be started in Year 2, but due to COVID-19, these flyers were not distributed to the town clerk's offices.

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:

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:

Of the 133 MS4 Outfalls in Rockland, a consulting company determined that 4 outfalls did not exist and 24 structures were not outfalls. The Town of Rockland now has an inventory of 105 MS4 Outfalls.

The 2016 Integrated List of Waters was released in Year 2 of the MS4 Permit and replaced the 2014 Integrated List of Waters. As such, the following water quality impairments within the MS4 area in Rockland have been updated: The Old Swamp River (MA74-03) has a new E. Coli impairment (Category 5); Cushing Brook (MA94-40) has a new E. Coli impairment (Category 5); and French Stream (MA94-03) has a new E. Coli impairment (Category 5).

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**: 17

*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: School curriculum, programs, press release, social media post

Message Description and Distribution Method:

School Program around stormwater and conservation. Groundwater model, watershed model and cleaning dirty water taught to elementary school students and parent volunteers in school program.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

Due to the Covid-19 pandemic, the school program had to go virtual. Environmental Educator Brian Taylor created videos on the school program content that teachers used with their students. The teachers also had the Watershed Jeopardy game to play with the students. All of the teachers were also given a packet of supplemental materials to go with the program.

A press release to went out to the Town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and Rockland Standard. There were 535 views on the school program web page. The program was also posted on the NSRWA Facebook page with a reach of 884 people and 83 engagements.

Message Date(s): May 21, 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: Press release, social media post, flyer, web page

Message Description and Distribution Method:

Annual Regional Rain Barrel Sale including education about water conservation and the reduction of stormwater from impervious surfaces.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A press release to went out to the Town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. Facebook posts were made on the NSRWA page, Rockland Hub and Reimagine Rockland. Information about the sale went out in the NSRWA E-newsletter to 7,800+ subscribers. There were 60 rain barrels sold with 3 sold to residents of Rockland.

Message Date(s): March 5, 2020

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

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

If yes, describe why the change was made:

BMP: Special event, festival, fairs

Message Description and Distribution Method:

Gardening Green Expo: a regional event for WaterSmart South Shore Communities that provides information on how residents can reduce stormwater pollution from better landscaping practices.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

Due to the Covid-19 pandemic, the Gardening Green Expo had to go virtual. NSRWA put speaker videos online and had 2,399 web page views. NSRWA took orders for rain barrels, had downloadable water saving plant lists, and also reposted last years speaker videos. They also had a drawing for a custom water saving garden design and 38 people registered for that drawing.

Message Date(s): March 12, 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: Brochures and pamphlets, social media posts

Message Description and Distribution Method:

Greenscapes Guide: digital download of landscaping techniques that reduce stormwater pollutants (fertilizers, pesticides, herbicides).

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

Due to the Covid-19 pandemic, the Greenscapes Guide could not be handed out at Gardening Green Expo. The downloadable Greenscapes Guide was promoted online and on the NSRWA Facebook page. It was also promoted on the Rockland Hub and Reimagine Rockland Facebook pages. There was 1 download from Rockland. NSRWA also held a How to Build a Rain Garden Zoom webinar with 25 attendees.

Message Date(s): June 25, 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: Social media posts

Message Description and Distribution Method:

MS4 messaging involving fertilizing.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A fertilizer message called "Don't P on You Lawn" was posted on the NSRWA Facebook page in June with a reach of 23,001 people and 2,183 engagements. It was also posted on the Rockland Hub and Reimagine Rockland Facebook pages. The Facebook post was boosted in June with a $50 ad targeted to Rockland with a reach of 1,907 people and 248 engagements. There were also 19 page views on the Know Before You Mow! web page, 106 page views on the Best Mowing Practices web page, and 172 page views on the Stormwater web page. NSRWA also hosted a Zoom webinar on Stormwater in May with 17 attendees.

Message distributed in accordance to the Town's Phosphorus impairment requirements.

Message Date(s): May 13, 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: Social media posts

Message Description and Distribution Method:

MS4 messaging involving grass clippings.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A grass clippings message called "Know before you Mow!" was posted on the NSRWA Facebook page in June with a reach of 119,638 people and 24,325 engagements. It was also posted to the Rockland Hub and Reimagine Rockland Facebook pages. The Facebook post was boosted in June with a $50 ad targeted to Rockland with a reach of 12,468 people and 674 engagements. There were also 19 page views on the Know Before You Mow! web page, 106 page views on the Best Mowing Practices web page, and 172 page views on the Stormwater web page.

Message distributed in accordance to the Town's Phosphorus impairment requirements.

Message Date(s): June 16, 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: Brochures and pamphlets, social media posts, press release

Message Description and Distribution Method:

Pet Waste Education: printed "Scoop It" cards, web article, press release, and social media posts for June.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

Due to the Covid-19 pandemic, the Pet waste Scoop It cards were not distributed to town clerk's offices, vets and businesses. An article was written on The Problem of Dog Waste on the South Shore. This was sent to the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and Rockland Standard. It was posted on the NSRWA Facebook page with a reach of 67,503 people and 10,088 engagements, and on the Rockland Hub and Reimagine Rockland Facebook pages. The Facebook post was boosted with a $50 ad targeted to Rockland with a reach of 7,650 people and 200 engagements. There were also 453 page views on The Problem of Dog Waste on the South Shore web page, 22 page views on the Pet Waste Education page, 202 page views on the Addressing the Elephant in the Room - Dog Waste on the South Shore web page.

Message distributed in accordance to the Town's Phosphorus impairment requirements and bacteria and

pathogens TMDL and impairment requirements.

Message Date(s): June 2, 2020

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

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

If yes, describe why the change was made:

BMP: Press release, social media post, web page, brochure

Message Description and Distribution Method:

Septic maintenance messaging, corresponding with SepticSmart week in September.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A press release to went out to the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and Rockland Standard. A Facebook post was boosted in September with a $50 ad targeted to all WaterSmart towns with a reach of 27,648 people and 656 engagements, and a $50 ad targeted to Rockland with a reach of 1,446 and 177 engagements.

Message distributed in accordance to the Town's bacteria and pathogens TMDL and impairment requirements.

Message Date(s): September 18, 2019

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

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

If yes, describe why the change was made:

BMP: Social media posts

Message Description and Distribution Method:

MS4 messages involving proper grass clippings disposal.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A message about leaf litter called "DON'T BLOW IT! Don't blow, sweep or dump grass clippings and yard waste into streets or storm drains" was posted on the NSRWA Facebook page in October and was boosted with a $50 ad targeted to all WaterSmart towns with a reach of 25,444 people and 1,492 engagements. A $50 ad targeted to Rockland had a reach of 1,563 people and 206 engagements. There were also 106 page views on the Best Mowing Practices web page, and 172 page views on the Stormwater web page.

Message distributed in accordance to the Town's Phosphorus impairment requirements.

Message Date(s): October 18, 2019

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

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

If yes, describe why the change was made:

BMP: Brochure to be handed out with permits in towns

Message Description and Distribution Method:

"Proper Sediment and Erosion Control Management" messaging.

Targeted Audience: Developers (construction)

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A brochure entitled Construction Stormwater Pollution Prevention Guide was created and delivered to the town Building Department. These brochures will be handed to the person when they receive their permit. There were 750 distributed to the town of Rockland.

Message Date(s): October 2019 & onward

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: Press release, social media post, web page

Message Description and Distribution Method:

Video contest involving video submissions to help educate the public about stormwater pollution and water conservation.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

NSRWA held/are holding a WaterSmart Video Contest through the summer of 2020. Submissions will be a 1-3 minute videos to help educate the public by creating a fun video that highlights either stormwater pollution and how to prevent it, or ways to conserve water. NSRWA partnered with Harbor Media for the contest and they provided the guidelines as well as a cash prize for the 1st place winner. All of the videos will be shared on the NSRWA and WaterSmart website pages and on social media.

Message Date(s): Summer of 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:

This outreach was developed by the NSRWA to supplement outreach listed on the NOI.

BMP:"Fowl Water" Social Media Campaign

Message Description and Distribution Method:

Stormwater social media video "Stormwater pollution is trash, oil, cigarette butts, and dog waste" in Think Blue Massachusetts "Fowl Water" campaign (https://thinkbluemassachusetts.org/). Advertisement on Facebook, Instagram, and YouTube.

Targeted Audience: Residents

Responsible Department/Parties: Think Blue

Measurable Goal(s):

Estimated 39,119 residents reached via the "Fowl Water" campaign.

Message Date(s): May 16 - June 5, 2020

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

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

If yes, describe why the change was made:

BMP: Annual message - Proper lawn maintenance

Message Description and Distribution Method:

Think Blue Massachusetts shared posts on Facebook in the spring encouraging the proper use and disposal of

grass clippings and encouraging the proper use of slow-release fertilizers.

Targeted Audience: Businesses, institutions and commercial facilities; Residents

Responsible Department/Parties: Think Blue

Measurable Goal(s):

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

Distributed in accordance with the requirements for the Town of Rockland's Phosphorus impairment.

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

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

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

If yes, describe why the change was made:

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

Message Description and Distribution Method:

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

Targeted Audience: Residents

Responsible Department/Parties: Think Blue

Measurable Goal(s):

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

Distributed in accordance with the requirements for the Town of Rockland's Phosphorus impairment.

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

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

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

If yes, describe why the change was made:

BMP: Annual pet waste message - Scoop the Poop

Message Description and Distribution Method:

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

Targeted Audience: Residents

Responsible Department/Parties: Think Blue

Measurable Goal(s):

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

Distributed in accordance with the requirements for the Town of Rockland's bacteria and pathogen impairment and TMDL and Phosphorus impairment.

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

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

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

If yes, describe why the change was made:

BMP: Annual septic maintenance message

Message Description and Distribution Method:

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

Targeted Audience: Residents

Responsible Department/Parties: Think Blue

Measurable Goal(s):

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

Distributed in accordance with the requirements for the Town of Rockland's bacteria and pathogen impairment and TMDL.

Message Date(s): September 16, 2019

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

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

If yes, describe why the change was made:

BMP: Annual winter deicing/salt message

Message Description and Distribution Method:

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

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

Responsible Department/Parties: Think Blue

Measurable Goal(s):

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

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

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

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

If yes, describe why the change was made:

This outreach was developed by Think Blue to supplement the outreach already listed on Rockland's NOI.

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 and public comment of the SWMP.

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**:

Sponsored annual community cleanup day.

Rockland is a member of the North and South River Watershed Association.

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:

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: 62

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**:

The Town of Rockland completed the annual IDDE 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: 0

Number of inspections completed: 0

Number of enforcement actions taken: 0

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

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 under the Town's Stormwater Bylaw, Chapter 338, under Section 338-21

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: 1,833

Number of catch basins cleaned: 1,833

Total volume or mass of material removed from all catch basins: 60 tons

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

Total number of catch basins: 1,833

If applicable:

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

Street Sweeping

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

- ◉ Number of miles cleaned: 150
- ○ Volume of material removed: [Select Units]
- ○ Weight of material removed: [Select Units]

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: 2

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

N/A

Additional Information

Monitoring or Study Results

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

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

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

Additional Information

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

COVID-19 Impacts

Optional: If any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Field work required to complete some Year 2 requirements were delayed due to COVID-19 safety concerns.

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:

In Year 3, the NSRWA will be completing the following outreach (in addition to NSRWA's annual initiatives):

- Pet waste handout/mailer to go with dog licensing; distribute to residents at local veterinarian offices and local pet stores & WaterSmart website. This outreach effort was delayed this year due to COVID-19.

- Messaging involving proper management of waste materials and dumpsters to minimize contaminates from entering stormwater; distributed to businesses, institutions, and commercial facilities via a press release, social media post, web page, and brochure.

- Messaging involving proper management of waste materials and dumpsters to minimize contaminates from entering stormwater; distributed to industrial facilities via a press release, social media post, web page, and brochure.

- Messaging involving parking lot maintenance, salt storage, sweeping, catch basin cleaning, and fleet maintenance; distribute to residents via a press release, social media post, web page, and brochure.

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 Rockland

EPA NPDES Permit Number: MAR041058

Primary MS4 Program Manager Contact Information

Name: Dave Taylor Title: Highway Superintendent

Street Address Line 1: 841 Market Street

Street Address Line 2:

City: Rockland State: MA Zip Code: 02370

Email: dtaylor@rockland-ma.gov Phone Number: (781) 878-0634

Stormwater Management Program (SWMP) Information

SWMP Location (web address):

Date SWMP was Last Updated: September 2020

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

SWMP is located at the Highway Department (841 Market Street, Rockland MA 02370) and the Sewer Department (587R Summer Street Rockland, MA 02370); it was made available to the public on June 15, 2019.

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:

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 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:

EP has prepared training materials and will provide training to employees involved in IDDE program. The foundation for O&M programs for all permittee owned facilities are completed and the execution of said procedures is currently in progress.

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:

Permittee or its agents disseminated educational material to dog owners and owners of septic systems by providing a link to the The Central MA Stormwater Coalition, Neponset River Watershed Association and North & South Rivers Watershed Association Facebook pages.

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:

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

Part III: Receiving Waters/Impaired Waters/TMDL

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

- (●) Yes
- ( ) No

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

The Original NOI submitted for the Town of Rockland stated that there were 132 MS4 outfalls. Since then, EP personnel visited 74 outfalls during dry weather, approximately 50% of the now 134 total identified MS4 outfalls in the Town of Rockland, brining the total percentage of outfalls screened by June 2021 to 100%.

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**: 14

*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:School curriculum, programs, press release, and Social media posts

Message Description and Distribution Method:

The Town of Rockland is partnered with the North South River Watershed Association (https://www.nsrwa.org/what-we-care-about/where-we-work/) which is an organization that strives to provide educational and scientific support to communities in the North and South River watershed. This has been demonstrated though their virtual Watersmart videos and in-school WaterSmart school program "Water All Around You" being taught as part of the Rockland school curriculum. A press release also to went out to the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard, and the videos were also posted on the NSRWA Facebook page.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

Due to the Covid-19 pandemic, the school program had to go virtual. Environmental Educator Brian Taylor created videos on the school program content that teachers used with their students. There were 80 students who participated in the program in Rockland, 371 views on the school program web page, and 270 views on the NSRWA YouTube page. Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign through Facebook and YouTube.

Message Date(s): May 21, 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: Outdoor Stewardship and Education Opportunity

Message Description and Distribution Method:

The North South River Watershed Association in collaboration with the Rockland Recreation Department sponsored a South Shore Adventures program for Rockland youth to encourage outdoor stewardship and education (https://rocklandma.myrec.com/info/activities/program_details.aspx?

ProgramID=30151&fbclid=IwAR0Z9AtME1m346wTp4GWoAQU38BF8MaKTXTvUkpEAOTFaY5pNW7MLuiukR0)

Targeted Audience: Residents

Responsible Department/Parties: The North South River Watershed Association, Rockland Recreation Departn

Measurable Goal(s):

The South Shore Adventures program for Rockland youth included 10 participants, and the North South River Watershed Associations facebook post received 3 likes and 10 shares.

Message Date(s): May 6, 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 MS4 Town Website and Social Media Posts

Message Description and Distribution Method:

Rockland also urges it's residents to follow and share information regarding stormwater best management practices posted on the North and South River Watershed Associations Facebook page (https://www.facebook.com/nsrwa.org). Links to The Central MA Stormwater Coalition, Neponset River Watershed Association, and Think Blue Massachusetts are provided under The Town StomwaterMS4 section of their website alongside other educational Stormwater MS4 documents and press releases. (https://www.rockland-ma.gov/474/StormWaterMS4)

Targeted Audience: Residents

Responsible Department/Parties: Rockland, North and South River Watershed Association, The Central MA St

Measurable Goal(s):

The North and South River Watershed Associations Facebook page reaches upwards of 5,000 people, The Central MA Stormwater Coalitions Facebook page has an audience of 55 people, the Neponset River Watershed Associations Facebook Page reaches upward of 2,200 people, and Think Blue Massachusetts facebook page has 269 likes and 350 followers.

Message Date(s): August 18, 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: Spring Annual Message

Message Description and Distribution Method:

The Town provided a link to the North South River Watershed Associations Facebook page, who distributed an annual message encouraging the proper use and disposal of grass clippings as part of their Water Smart South Shore campaign.

Targeted Audience: Residents

Responsible Department/Parties: Rockland, North South River Watershed Association

Measurable Goal(s):

The post titled "Know Before You Blow" received 13 likes and 11 shares, and Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people.

Message Date(s): June 3, 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: Summer Annual Message

Message Description and Distribution Method:

The Town provided a link to the North South River Watershed Associations Facebook page, who distributed an annual message encouraging the proper use of slow-release and phosphorus-free fertilizers in a post titled "You're not just fertilizing the lawn!" as part of their Water Smart South Shore campaign.

Targeted Audience: Residents

Responsible Department/Parties: Rockland, North South River Watershed Association

Measurable Goal(s):

The post titled "You're not just fertilizing the lawn!" had 2,391 people and 184 engagements when it was boosted in Rockland. There were also 209 page views on the stormwater web pages, and Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people.

Message Date(s): May 19, 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: Dog Waste Message

Message Description and Distribution Method:

The Town provided a link to the North South River Watershed Associations Facebook page, who posted an annual message in the summer encouraging the proper management of pet waste as part of their Water Smart South Shore campaign. The post was titled "The Pet Waste Problem on the South Shore". The Pet Waste Outreach Program distributed 100 Pet waste Scoop It cards to the town clerk's office, and a post was created and posted on the NSRWA Facebook page and on the Rockland Hub Facebook page. In addition, an informative article was written "on Addressing the Dog Waste Problem on the South Shore"and was sent to The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard.

Targeted Audience: Residents

Responsible Department/Parties: Rockland, North South River Watershed Association

Measurable Goal(s):

The post titled "The Pet Waste Problem on the South Shore" received 10 likes 6 shares, and 2 comments. Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people.

Message Date(s): June 17, 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: Fall Annual Message

Message Description and Distribution Method:

The Town provided a link to the North South River Watershed Associations Facebook page distributed an annual message in the fall encouraging the proper disposal of leaf litter as part of their Water Smart South Shore campaign. The post was titled "Don't Blow it!".

Targeted Audience: Residents

Responsible Department/Parties: Rockland, North South River Watershed Association

Measurable Goal(s):

The post titled "Don't Blow it!" received 1,000 likes 262 shares, and 36 comments. Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people.

Message Date(s): October 16, 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: Rain Barrel Sale

Message Description and Distribution Method:

On behalf of the Town of Rockland, North and South Rivers Watershed Association organized a Rain Barrel Sale as part of their Water Smart South Shore campaign. A press release went out to: the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. In Addition, Facebook posts were made on the NSRWA page and town connect pages. Information about the sale also went out in the NSRWA E-newsletter.

Targeted Audience: Residents

Responsible Department/Parties: Town of Rockland, North and South Rivers Watershed Association

Measurable Goal(s):

The NSRWA E-newsletter was distributed to 10,000+ subscribers, and there were 9 sold to residents of Rockland. Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people

Message Date(s): April 7, 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: Gardening Green Expo.

Message Description and Distribution Method:

On behalf of the Town of Rockland, North and South Rivers Watershed Association organized a Gardening Green Expo, a week long event with live sessions each day as well as prerecorded speaker videos. A downloadable Greenscapes Guide was also promoted online, on the NSRWA Facebook page, and on the Rockland Hub Facebook page.

Targeted Audience: Residents

Responsible Department/Parties: Town of Rockland, North and South Rivers Watershed Association

Measurable Goal(s):

There were 639 live attendees, as well as 1,007 YouTube viewers, Speaker videos online had 4,170 web page views, and a drawing for free products and prizes in which 115 people registered. The North South River Watershed Associations Facebook page upwards of 5,000 people, and the Rockland Hub Facebook page has (9.8k members)

Message Date(s): March 22,2021

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:Septic Maintenance Message

Message Description and Distribution Method:

On behalf of the Town of Rockland, North and South Rivers Watershed Association organized and distributed a press release on septic maintenance to went out to: the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. A Facebook post highlighting the EPA's SepticSmart Week was created to spread awareness to residents as well.

Targeted Audience: Residents

Responsible Department/Parties: Town of Rockland, North and South Rivers Watershed Association

Measurable Goal(s):

A Facebook post targeted to Rockland reached of 7,666 people and 381 engagements. Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by this campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people

Message Date(s): September 17, 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: Construction Stormwater Pollution Prevention Guide

Message Description and Distribution Method:

On behalf of the Town of Rockland, North and South Rivers Watershed Association organized and distributed A brochure entitled "Construction Stormwater Pollution Prevention Guide" to the Building Department.

Targeted Audience: Developers (construction)

Responsible Department/Parties: Town of Rockland, North and South Rivers Watershed Association

Measurable Goal(s):

The Building Department handed these brochures to people when they receive their permit.

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:Proper Management of Waste Materials and Dumpsters Postcard

Message Description and Distribution Method:

On behalf of the Town of Rockland, North and South Rivers Watershed Association organized and distributed a "Proper Management of Waste Materials and Dumpsters 6” X 11” postcard" to all of the Businesses, Institutions, Commercial Facilities and Industrial Facilities in Rockland.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Town of Rockland, North and South Rivers Watershed Association

Measurable Goal(s):

67 postcards were mailed in Rockland.

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: Water for People WMA Grant: videos, online pledge, and lawn signs.

Message Description and Distribution Method:

The NSRWA also received a WMA Grant on behalf of the WaterSmart towns, which allowed them to produce a series of videos, an online pledge, and lawn signs. This campaign is scheduled to continue through the end of August.

Targeted Audience: Resdients

Responsible Department/Parties: Town of Rockland, North and South Rivers Watershed Association

Measurable Goal(s):

So far, there have been 11,190 people reached and 138 engagements on Facebook in Rockland. Think Blue Massachusetts reports that 22,727 people in Rockland have been reached by the WaterSmart campaign, and the North South River Watershed Associations Facebook page upwards of 5,000 people

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: Fowl Water Campaign

Message Description and Distribution Method:

Stormwater social media video campaign called "Fowl Water" that educates residents on how "stormwater pollution is trash, oil, cigarette butts, & dog waste." Campaign is run by Think Blue Massachusetts (https://thinkbluemassachusetts.org/) and published with advertisements on Facebook, Instagram, & YouTube.

Targeted Audience: Residents

Responsible Department/Parties: Think Blue Massachusetts

Measurable Goal(s):

Think Blue Massachusetts estimates that 22,727 people in Rockland have been reached by this campaign through Facebook and YouTube.

Message Date(s): May 17 to July 4, 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:

This outreach was developed by Think Blue on behalf of the Town to supplement outreach already noted on the NOI.

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**:

The SWMP was posted to the Towns StormwaterMS4 page on their website, and residents were encouraged to read through it and send feedback.

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**:

South Shore Recycling Cooperative (SSRC) towns hosted a household hazardous waste collections last fall for Rockland on Oct. 3, 2020.

Rockland is a member of the North and South River Watershed Association.

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:

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: 74

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

Percent of outfalls screened: 100

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

Catchment Investigations

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

- (•) No catchment investigations were conducted
- ( ) The catchment investigation data is attached to the email submission
- ( ) The catchment investigation data can be found at the following website:

N/A

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

Number of catchment investigations completed this reporting period: 0

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

Percent of total catchments investigated: 0

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

Catchment Investigations need to be completed by Year 10 of the MS4 Permit.

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:

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 this reporting period**:

Employee Training materials have been completed and will be distributed.

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: 0

Number of inspections completed: 0

Number of enforcement actions taken: 0

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

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: 0

Optional: Enter any additional information relevant to the submission of as-built drawings:

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:

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:

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:

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: 0

Number of catch basins cleaned: 0

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

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

Total number of catch basins: 0

If applicable:

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

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: [Select Units]

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:

Highway Department:
Salt stockpile runoff may be entering into nearby catch basin; Steel plate is used to cover catch basin when salt is dropped off, but a permanent solution is needed,
Dumpster lids are kept closed at all times,
Deicing chemicals are now stored inside.

Additional Information

Monitoring or Study Results

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

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

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

Additional Information

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

COVID-19 Impacts

Optional: If any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 4 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

- Develop a report assessing current street design and parking lot guidelines and other local requirements within the municipality that affect the creation of impervious cover
- Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist
- Identify a minimum of 5 permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious areas

Annual Requirements

- Annual report submitted and available to the public

- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all curbed streets at least annually
- Continue investigations of catchments associated with Problem Outfalls
- Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary
- Review O&M programs for all permittee owned facilities; update if necessary
- Implement all maintenance procedures for permittee owned facilities in accordance with O&M programs
- Implement program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- Enclose all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- Review as-built drawings for new and redevelopment to ensure compliance with post construction bylaws, regulations, or regulatory mechanism consistent with permit requirements
- Inspect all permittee owned treatment structures (excluding catch basins)

Provide any additional details on activities planned for permit year 4 below:

In Year 4, the NSRWA will be completing the following outreach (in addition to NSRWA's annual initiatives):

- Parking Lot Maintenance - The NSRWA will provide education relevant to parking lot maintenance, salt storage, sweeping, catch basin cleaning, and fleet maintenance to Hanover businesses.

- Low Impact Development Information Targeted to Developers - The NSRWA will provide education relevant to reduction of impervious surfaces, use of alternatives to paving, decentralized approach to stormwater, rain gardens, swales, and bioretention area.

- WaterSmart Public Art Raffle or Contest - The NSRWA will come up with a stormwater message for residents to coincide with either an art raffle or a public contest to spread the message.

Part V: Certification of Small MS4 Annual Report 2021

40 CFR 144.32(d) Certification

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

Name: Title:

Signature: Date:

[Signatory may be a duly authorized representative]

Year 5 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2022-June 30, 2023

Please DO NOT attach any documents to this form. Instead, attach all requested documents to an email when submitting the form. Also ensure any websites included on this form are to publicly accessible sites

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, 2022 and June 30, 2023 unless otherwise requested.

Part I: Contact Information

Name of Municipality or Organization: Town of Rockland

EPA NPDES Permit Number: MAR041058

Primary MS4 Program Manager Contact Information

Name: David Taylor, Jr. Title: Highway Superintendent

Street Address Line 1: 841 Market Street

Street Address Line 2:

City: Rockland State: MA Zip Code: 02370

Email: dtaylor@rockland-ma.gov Phone Number: (781)878-0634

Stormwater Management Program (SWMP) Information

SWMP Location (publicly available web address): https://rockland-ma.gov/474/StormWaterMS4

Date SWMP was Last Updated: September 2023

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

SWMP is located at the Highway Department (841 Market Street, Rockland MA 02370) and the Sewer Department (587R Summer Street Rockland, MA 02370).

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.*

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 publicly available website:

☒ Updated system map due in year 2 as necessary

☐ Provided training to employees involved in IDDE program within the reporting period

☒ Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters

☒ All curbed roadways were swept at least once within the reporting period

☒ 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 or provide any additional details, please use the box below:

Annual training (IDDE training) is to be held this fall.

Two SSOs occurred at the wastewater treatment plant on January 26, 2023 and March 15, 2023. The discharge/overflow did not affect any surrounding drainage within the area. The discharge/overflow affected the French Stream, located downstream of the wastewater treatment plant. The Town of Rockland has been diligently working with a consultant on treatment plant upgrades in hopes to decrease the amount of SSOs that occur at the treatment plant. The SSOs that occurred at the treatment plant can be found here: https://eeaonline.eea.state.ma.us/portal/dep/cso-data-portal/results?queryString=municipality:ROCKLAND

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

☐ This is not applicable because there are no septic systems present

** 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:

In the process of determining oversight of septic system maintenance and records, will be a shared responsibility of Board of Health and Highway Department. Look to make progress on this in Year 6.

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)

Structural BMPs

☒ Completed the evaluation of all permittee owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under permit part 2.3.6.d or identified in the Phosphorus Source Identification Report, including: *(select the items of the evaluation that have been completed below)*

- ☒ Next planned infrastructure, resurfacing, or redevelopment activity planned for the property (if applicable) OR planned retrofit date
- ☒ Estimated cost of redevelopment or retrofit BMPs
- ☐ Engineering and regulatory feasibility of redevelopment or retrofit BMPs

☒ Completed a listing of planned structural BMPs and a plan and schedule for implementation

- ◉ The BMP list and implementation schedule is attached to the email submission
- ○ The BMP list and implementation schedule can be found at the following publicly available website:

☒ 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.

- ◉ No BMPs were installed
- ○ The above referenced BMP information is attached to the email submission
- ○ The above referenced BMP information can be found at the following publicly available website:

Total estimated phosphorus removed in **lbs/year** from the installed BMPs: 0

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

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

The Town has conducted maintenance of open drainage swales and headwalls - placing signage in key locations indicating "Town Drainage - No Dumping, No Parking". This will be an ongoing program, and will expand to other areas of Town.

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 the field investigations, 2 out of the 70 outfalls were identified as being culverted streams and were removed from the outfall inventory, thus bringing the total to 68 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**: 14

*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: School Program: Stormwater and Conservation Messaging

Message Description and Distribution Method:

Groundwater model, watershed model and cleaning dirty water taught to elementary school students and parent volunteers in school program

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

Now that we are past the Covid pandemic, school programs were in person again. Environmental Educator Brian Taylor created a series of videos that teachers used with their students. The teachers also had the Watershed Jeopardy game to play with the kids. All of the teachers were also given a packet of supplemental materials to go with the program. There were 140 students who participated in the program in 2 school visits. In a sample survey, 85% of the students and 80% of the parents reported having a greater understanding of where their water comes from AFTER the program, 85% of the students and 80% of the parents reported having a greater understanding of the importance of conserving water AFTER the program, and 80% of the students and 80% of the parents reported having a greater understanding of how pollutants and runoff affect the quality of water AFTER the program.
A press release went out to the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. There were 450 views on the school program web page which has the virtual videos.

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: Regional Rain Barrel Sale

Message Description and Distribution Method:

Education about water consevation and the reduction of stormwater from impervious surfaces

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A press release went out to the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. There were 7,618 web page views. Facebook posts were made on the NSRWA page and Rockland Hub page. There was a $50 boost of the Facebook ad targeted to Rockland that resulted in 9,984 people reached, and 395 engagements. Information about the sale went out in the NSRWA E-newsletter to 11,246 subscribers. There were 115 rain barrels sold with 5 sold to residents of Rockland.

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: Gardening Green Expo

Message Description and Distribution Method:

Regional event for WaterSmart South Shore Communities that provides information on how residents can reduce stormwater pollution from better landscaping practices.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

This year, the Gardening Green Expo was a series of 5 Zoom seminars and a live event on Saturday with 4 live lectures. The Zoom lectures were headlined by renowned author Doug Tallamy. The live event featured local experts, services, vendors, and environmental organizations. We took orders for rain barrels and had downloadable water-saving plant lists. There were 1,048 webinar and live attendees. We also had a drawing for signed books, gift certificates, a rain barrel, gift baskets, and more, and 173 people registered for that drawing. We put the speaker videos online and we had 4,381 web page views and 799 YouTube views. The event was also promoted on Facebook and Instagram. It was posted on the NSRWA Facebook page with 438 engagements, 25 comments, and 112 shares. There was also a $50 Facebook ad targeted to Rockland with a reach of 4,688 people and 268 engagements.

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: Greenscapes Guide

Message Description and Distribution Method:

Digital download of landscaping techniques that reduce stormwater pollutants (fertilizers, pesticides, herbicides)

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

The downloadable Greenscapes Guide was promoted online and on the NSRWA Facebook page. It was also promoted on the Rockland Hub Facebook page. It had 567 web views and 59 downloads. There was a $50 boost of the Facebook ad targeted to Rockland that resulted in 9,932 people reached, and 321 engagements.

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: MS4 Message

Message Description and Distribution Method:

Fertilizer for May/June

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A fertilizer message was posted on the NSRWA Facebook page in June. It was also posted to the Rockland Hub Facebook page. The fertilizer Facebook post was boosted in June with a $50 ad targeted to Rockland that will run through June 24. That boosted ad had a reach of 5,406 people and 181 engagements as of June 22. There were also 10 page views on the Know Before You Mow! web page, 70 page views on the Best Mowing Practices web page, and 153 page views on the Stormwater web page.

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: MS4 Message

Message Description and Distribution Method:

Grass Clippings in June

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A grass clippings message was posted on the NSRWA Facebook page in June with 265 engagements. It was also posted to the Rockland Hub Facebook page. The grass clippings Facebook post was boosted with a $50 ad targeted to Rockland that will run through July 7. As of June 22, the ad had a reach of 1,437 people and 40 engagements. There were also 10 page views on the Know Before You Mow! web page, 70 page views on the Best Mowing Practices web page, and 153 page views on the Stormwater web page.

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: Septic Maintenance

Message Description and Distribution Method:

Maintenance of septic systems, corresponding with SepticSmart week in September

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A press release to went out to the town, The Globe, the Patriot Ledger, Wicked Local, the Rockland Mariner, and the Rockland Standard. A Facebook ad was posted in September with a reach of 581 people, 9 comments, and 23 shares. A $50 Facebook ad was targeted to Rockland with a reach of 4,053 people and 102 engagements.

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: Leaf Litter

Message Description and Distribution Method:

HELP KEEP STORM DRAINS CLEAN – ADOPT A STORM DRAIN NEAR YOU! Don't blow, sweep or dump leaf litter and yard waste into streets or storm drains. Social media posts for October

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A message about leaf litter was posted on the NSRWA Facebook page in October. The HELP KEEP STORM DRAINS CLEAN message had a reach of 1,452 people, 49 comments, and 199 shares. The Facebook post was boosted with a $50 ad targeted to Rockland with a reach of 4,133 people and 183 engagements. There were also 81 page views on the Best Mowing Practices web page, and 125 page views on the Stormwater web page.

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: Proper Sediment and Erosion Control Management

Message Description and Distribution Method:

Provided by Building Department at permit request

Targeted Audience: Developers (construction)

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

A brochure entitled Construction Stormwater Pollution Prevention Guide was created and delivered to the Building department. These brochures will be handed to the person when they receive their permit. There were 750 distributed to the town of Rockland initially, and we are currently replenishing their supply.

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:Public Art Raffle with Survey - What Can You Do to Help Keep Stormdrains Clean? (August)

Message Description and Distribution Method:

We provided handcrafted metal garden fish stakes to be raffled in each town and online. There was an education piece on stormwater and how storm drains empty unfiltered directly into our water bodies.

Targeted Audience: Residents

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

The "What Can You Do to Help Keep Stormdrains Clean?" campaign raised awareness of the fact that storm drains empty unfiltered water into our local rivers and streams. A press release, posts, and an e-news story were used to educate the public. We provided handcrafted metal garden fish stakes to be raffled in each town and online. Everyone who entered the drawing had to answer the question "What can you do to help keep stormdrains clean?" There were 341 web page views, 214 entries and we selected 12 winners. The post on Facebook received 116 engagements, 14 comments, and 12 shares. A $50 ad targeted to Rockland had a reach of 1,276 people and 54 engagements. I also did a radio interview on WATD about keeping storm drains clean.

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: Proper Management of Waste Materials and Dumpsters

Message Description and Distribution Method:

Web page, social media post, educational video, and Free Dumpster Maintenance and Waste Materials Checklist

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

We created a Best Practices Checklist for Proper Management of Waste Materials and Dumpsters. This downloadable file was posted on a WaterSmart website page with 63 views. We created an educational video that was posted on our website and our Facebook page. It was also posted on 9 South Shore business and industry Facebook groups, with a combined reach of 10,600+. A $50 ad targeted to Rockland had a reach of

3,865 people and 3,045 engagements with 2,306 thru plays.

Message Date(s):

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

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

If yes, describe why the change was made:

BMP: Parking Lot Maintenance

Message Description and Distribution Method:

Web page, social media post, educational video, and Free Parking Lot Maintenance Checklist

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

We created a Best Practices Checklist for Parking Lot Maintenance. This downloadable file was posted on a WaterSmart website page with 52 views. We created an educational video that was posted on our website and our Facebook page. It was also posted on 9 South Shore business and industry Facebook groups, with a combined reach of 10,600+. A $50 ad targeted to Rockland had a reach of 4,365 people and 3,024 engagements with 2,039 thru plays.

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: Low Impact Development Information Targeted to Developers

Message Description and Distribution Method:

Reduction of impervious surfaces, use of alternatives to paving, decentralized approach to stormwater, rain gardens, swales, bioretention

Targeted Audience: Developers (construction)

Responsible Department/Parties: North and South Rivers Watershed Association as part of the WaterSmart reg

Measurable Goal(s):

This deliverable will be completed in the Summer of 2023. We are creating a brochure to be handed out with

permits, and a poster with a QR code for all town departments who issue permits.

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:

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**:

The SWMP was posted to the Towns Stormwater MS4 page on their website, and residents were encouraged to read through it and send feedback.

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**:

The North and South River Watershed Association (NSWRA) hosted a Gardening Green expo between March 13, 2023 and March 18, 2023 and offered 5 online, interactive workshops. One of the workshops included Composting and Mulching for Climate-Wise Gardening. The Town of Rockland is within the North and South River Watershed and a member of NSWRA.

On March 29, 2023, the South Shore Recycling Cooperative (SSRC) and HandUp Mattress Recycling teamed up for special curbside mattress pickup.

On April 15, 2023, the Open Space Committee, REiMAGINE ROCKLAND, Board of Health, Highway and Parks Departments hosted a community cleanup day. Trash and debris was cleared along the Rail Trail, Union Street, Hartsuff Park and surrounding schools.

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:

As part of the catchment investigations, mapping updates within the Town's geographic information (GIS) database were also performed. Mapping updates included:
• Adding or removing stormwater structures (catch basins, drain manholes, drainage pipes, outfalls/outlets, inlets, and culverts)
• Updating pipe connectivity between stormwater structures
• Updating the GIS database with elevation/invert data and
• Reviewing the final totals of the stormwater structure inventory
The mapping updates have been made on the Town's cloud-based GIS. Any additional mapping updates made by the Town will continue to be made in that GIS.

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 above referenced outfall screening data is attached to the email submission

○ The above referenced outfall screening data can be found at the following publicly available 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 outfalls/interconnections screened **to date**.*

Percent of outfalls screened: 100

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

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 publicly available website:

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

Number of catchment investigations completed this reporting period: 25

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

Percent of total catchments investigated: 39

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

29 catchments were visited on May 25, 2023, and between June 14, 2023, and June 16, 2023. Catchment investigations at 25 catchments were fully completed, initial field investigations were completed at 4 catchments and require additional Town assistance to complete the field work. During the field investigations, 2 out of the 70 outfalls were identified as being culverted streams and were removed from the outfall inventory, thus bringing the total to 68 outfalls.

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 publicly available 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 this reporting period**:

The annual training presentation has been recorded and will be conducted this fall.

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: 2

Number of inspections completed: 15

Number of enforcement actions taken: 6

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

Enforcement actions taken include Mulch Wattles, catch basin sediment bags and street sweepers used to control the construction area.

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

Ordinance or Regulatory Mechanism

Date update was completed (due in year 3): 05-07-2018

Website of ordinance or regulatory mechanism: https://rockland-ma.gov/474/StormWaterMS4

As-built Drawings

*Below, report on the number of as-built drawings received **during this reporting period**.*

Number of as-built drawings received: 1

Optional: Enter any additional information relevant to the submission of as-built drawings:

Street Design and Parking Lots Report

Below, describe any changes made or planned to be made to local regulations and guidelines based on the report completed in Year 4:

The Town has not made any changes.

Green Infrastructure Report

Below, describe progress towards making green infrastructure practices allowable based on the report completed in Year 4:

The Town has not made any changes.

Retrofit Properties Inventory

Below, list remaining permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas (must maintain a minimum of 5 sites in inventory until less than 5 sites remain):

1. Benjamin Phelps Elementary School
2. Recycling Center / Landfill
3. Highway Department
4. Jefferson School
5. Police Department

Below, list all properties that have been modified or retrofitted with BMPs to mitigate impervious area that were inventoried as part of 2.3.6.d of the permit. Non-MS4 owned properties that have been modified or retrofitted with BMPs to mitigate impervious area may also be listed, but must be indicated as non-MS4.

Due to the new Elementary school being built, the Jefferson School will be demolished by October 2023. The Town is looking to improve drainage and stormwater systems at the property once the demolition is completed.

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: 950

Number of catch basins cleaned: 770

Total volume or mass of material removed from all catch basins: 200 tons

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

Total number of catch basins: 1,843

If applicable:

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

Street Sweeping

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

- (●) Number of miles cleaned: 150
- ( ) Volume of material removed: [Select Units]
- ( ) Weight of material removed: [Select Units]

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: 2

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

At the Rockland Highway Facility, a paving project has started which will reduce the amount of dust generated and vehicle tracking.

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 publicly available website(s):

  https://www.rockland-ma.gov/242/Sewer

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:

In May 2023, the Town of Rockland has started an infrastructure project to address infiltration (groundwater) within their sanitary sewer system. The project consists of structural repairs to their sanitary sewer manholes and pipes. The estimated date of completion was August 2023.

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. If any of the above year 5 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:

Existing BMPs have been updated at the highway barn; a manhole replaced a catch basin near the salt shed to eliminate runoff.

Two SSOs occurred at the wastewater treatment plant on January 26, 2023 and March 15, 2023. The discharge/overflow did not affect any surrounding drainage within the area. The discharge/overflow affected the French Stream, located downstream of the wastewater treatment plant. The Town of Rockland has been diligently working with a consultant on treatment plant upgrades in hopes to decrease the amount of SSOs that

occur at the treatment plant.

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 6 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

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)
- Identify additional permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious areas so that the permittee maintains a minimum of 5 sites in their inventory, until such a time when the permittee has less than 5 sites remaining

Provide any additional details on activities planned for permit year 6 below:

The Town hired a consulting company to assist Rockland on MS4 Permit requirements which include:
-Continued program meetings with the Town to discuss the MS4 program status.
-Continued annual training to the Rockland Highway employees involved in the IDDE program

-Continued Stormwater Management Plan updates, documenting progress made annually
-Continued IDDE catchment investigations and mapping updates
-Continued IDDE Plan updates
-Inspection of the the 12 BMP structures throughout the Town.
-Quarterly SWPPP inspections

Part V: Certification of Small MS4 Annual Report 2023

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]

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

Annual Report Submission

Please submit the form electronically via email to both EPA and MassDEP by clicking on one of the links below or using the email addresses listed below. Please ensure that all required attachments are included in the email and not attached to this PDF.

EPA: stormwater.reports@epa.gov MassDEP: Stormwater.DEP@mass.gov

Paper Signature:

If you did not sign electronically above, you can print the signature page by clicking the button below.

Print Signature Page

Optional: If you did not sign electronically above, you may lock the form by clicking the "Lock Form" button below which will prompt you to save the locked version of the form. Save this locked version under a new file name.

Lock Form

APPENDIX J

Minimum Control Measures BMPs

Town of Rockland, Massachusetts

MA MS4 General Permit - Control Measures

CM #1 - Public Education and Outreach

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**Distribution of a minimum of two (2) educational messages over the permit term to each of the four (4) required audiences**	Residents (1)	Conservation Commission, Sewer Department, Highway Department, Board of Health, Planning Board, IT Department	Distribute at least two educational messages to each audience within the permit term	2018
		Businesses, Institutions, and Commercial Facilities (2)	Conservation Commission, Sewer Department, Highway Department, Board of Health, Planning Board, IT Department		2018
		Developers (construction) (3)	Conservation Commission, Sewer Department, Highway Department, Board of Health, Planning Board, IT Department		2018
		Industrial Facilities (4)	Conservation Commission, Sewer Department, Highway Department, Board of Health, Planning Board, IT Department		2018

Town of Rockland, Massachusetts

MA MS4 General Permit - Control Measures

CM #2 - Public Involvement and Participation

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**Public Review**	SWMP Review	Sewer Department, Highway Department	Allow annual review of stormwater management plan and posting of management plan on website	2018
R2	**Public Participation**	SWMP Review	Sewer Department, Highway Department	Allow public to comment on stormwater management plan annually	2018
2A	Public Participation	Water Quality Testing	Sewer Department, Highway Department	Two rounds of water quality sampling of priority water bodies	2018
2B	Public Participation	Cleanups - Roadside/General	Sewer Department, Highway Department	Annual community cleanup days	2018

Town of Rockland, Massachusetts

MA MS4 General Permit - Control Measures

CM #3 - Illicit Discharge Detection and Elimination (IDDE) Program

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**SSO Inventory**	Develop SSO inventory in accordance with permit conditions	Sewer Department, Highway Department	Within 1 year of effective date develop inventory of historical SSOs that occurred within the MS4 in	2018
R2	**Storm Sewer System Map**	Create map and update during IDDE program completion	Sewer Department, Highway Department	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018
R3	**Written IDDE Program Development**	Create written IDDE program	Sewer Department, Highway Department	Complete within 1 year of the effective date of permit	2018
R4	**Implement IDDE Program**	Implement catchment investigations according to program and permit conditions	Sewer Department, Highway Department	Implement catchment investigations according to program and permit conditions	2018
R5	**Employee Training**	Train employees on IDDE implementation	Sewer Department, Highway Department	Train annually	2018
R6	**Conduct Dry Weather Screening**	Conduct in acordance with outfall screening procedure and permit conditions	Sewer Department, Highway Department	Conduct in accordance with outfall screening procedure and permit conditions	2018
R7	**Conduct Wet Weather Screening**	Conduct in acordance with outfall screening procedure	Sewer Department, Highway Department	Conduct in accordance with outfall screening procedure and permit conditions	2018
R8	**Ongoing Screening**	Conduct dry weather and wet weather screening as necessary	Sewer Department, Highway Department	Conduct in accordance with outfall screening procedure and permit conditions	2018
3A	IDDE Regulations	Regulatory revisions and actions	Sewer Department, Planning Board, Board of Health, Conservation Commission	Review regulations and identify areas for revisions	2018
3B	Permit Enforcement	Local construction site oversight and enforcement	Sewer Department, Planning Board, Board of Health, Conservation Commission	Continue to enforce local bylaws, state and federal requirements	2018
3C	IDDE Plan - Illegal Dumping Program	Connectivity mapping, bylaw enforcement and fines for misconnection/illegal dumping	Sewer Department, Highway Department, Board of Health	Continue local bylaw enforcement	2018

Town of Rockland, Massachusetts

MA MS4 General Permit - Control Measures

CM #4 - Construction Site Stormwater Runoff Control

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**Site inspection and enforcement of Erosion and Sediment Control (ESC) measures**	Complete written procedures of site inspections and enforcement procedures	Highway Department, Planning Board, Board of Health, Conservation Commission	Within 1 year of effective date of the permit, develop written/electronic SOP for inspection/enforcement of ESC measures	2018
R2	**Site plan review**	Complete written procedures of site plan review and begin implementation	Highway Department, Planning Board, Board of Health, Conservation Commission	Complete within 1 year of the effective date of the permit	2018
R3	**Erosion and Sediment Control**	Adoption of requirements for construction operators to implement a sediment and erosion control program	Highway Department, Conservation Commission	Complete within 1 year of the effective date of the permit	2018
R4	**Waste Control**	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Highway Department, Planning Board, Board of Health, Conservation Commission	Complete within 1 year of the effective date of the permit	2018
4A	Construction Standard ESC Specifications and Detailed Drawings	Improve as-built review	Highway Department, Planning Board	Develop protocol for submitting as-builts electronically and incorporating those files into Town GIS system	2018
4B	Construction Inspection	Dam Inspections	Highway Department, Sewer Department, Department of Transportation, Department of Conservation & Recreation	Address Phase 1 ODS Report findings and conclusions	2018

Town of Rockland, Massachusetts

MA MS4 General Permit - Control Measures

CM #5 - Stormwater Management in New Development and Redevelopment

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**As-built plans for on-site stormwater control**	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Highway Department, Planning Board	Require submission of as-built plans for completed projects	2018
R2	**Inventory and priority ranking of MS4-owned properties that may be retrofitted with BMPs**	Conduct detailed inventory of MS4 owned properties and rank for retrofit potential	Highway Department, Planning Board	Complete 4 years after permit effective date	2018
R3	**Allow green infrastructure**	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Highway Department, Planning Board	Complete 4 years after permit effective date	2018
R4	**Street design and parking lot guidelines**	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options	Highway Department, Planning Board	Complete 4 years after permit effective date	2018
R5	**Ensure any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality**	Adoption, amendment or modification of a regulatory mechanism to meet permits requirements	Highway Department, Planning Board	Complete 2 years after permit effective date	2018
5A	Post-Construction Ordinance/Bylaw	Regulatory revisions to bylaws as necessary	Highway Department, Planning Board, Board of Health, Conservation Commission	Review regulations and identify areas for revisions	2018
5B	Post-Construction Enforcement Procedures	Local construction site oversight and enforcement	Highway Department, Planning Board, Board of Health, Conservation Commission	Comply with local bylaws	2018

Town of Rockland, Massachusetts

MA MS4 General Permit - Control Measures

CM #6 - Good House Keeping and Pollution Prevention for Permittee Owned Operations

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**O&M procedures**	Create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment	Highway Department	Complete and implement 2 years after effective date of permit	2018
R2	**Inventory all permittee-owned parks and open spaces, buildings and facilities (including their storm drains), and vehicles and equipment**	Create inventory	Highway Department	Complete 2 years after effective date of permit and implement annually	2018
R3	**Infrastructure O&M**	Establish and implement program for repair and rehabilitation of MS4 infrastructure	Highway Department	Complete 2 years after effective date of permit	2018
R4	**Stormwater Pollution Prevention Plan (SWPPP)**	Create Stormwater Pollution Prevention Plan (SWPPP) for maintenance garages, transfer stations and other waste- handling facilities	Highway Department, Conservation Commission	Complete and implement 2 years after effective date of permit	2018
R5	**Catch Basin Cleaning**	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	Highway Department	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018
R6	**Street Sweeping Program**	Sweep all strets and permitee-owned parking lots in accordance with permit conditions	Highway Department	Sweep all streets and permitee-owned parking lots once per year in the spring	2018
R7	**Road Salt use optimization program**	Establish and implement a program to minimize the use of road salt	Highway Department	Implement salt use optimization during deicing season	2018
R8	**Inspections and maintenance of stormwater treatment structures**	Establish and implement inspection and maintenance procedures and frequencies	Highway Department	Inspect and maintain treatment structures at least annually	2018
6A	Hazardous Waste Collection	Household Hazardous Waste Days as part of South Shore Recylcing Cooperative	Highway Department, Conservation Commission, Board of Health	Annual collection	2018
6B	Waterbody Cleanup	Cleaning of Town Streams and Brooks	Highway Department, Conservation Commission, Board of Health	Continue to hire contractor to remove debris from streams and brooks when necessary	2018
6C	Employee Training - General Stormwater Topics	MS4 Permit training seminar attendance	Highway Department	Continue to attend training seminar	2018

Town of Rockland, Massachusetts

MA MS4 General Permit - In State Water Quality Impairments

South Coastal Watershed & Boston Harbor Watershed - Bacteria and Pathogens TMDL

BMP ID	BMP Categorization	BMP Description	Responsible Department/Parties	Measurable Goal	Beginning Year of Implementation
R1	**Public Education**	Residents	Highway Department, Sewer Department	Distribute annual message encouraging the proper management of pet waste	2018
R2	**Illicit Discharge**		Highway Department, Sewer Department	Prioritize catchment areas	2018

APPENDIX K

Operations and Maintenance (O&M) Plan

STORMWATER MS4
OPERATIONS & MAINTENANCE PLAN

Town of Rockland

June 2020

ENVIRONMENTAL PARTNERS

TABLE OF CONTENTS

LIST OF FIGURES ..... **III**

LIST OF APPENDICES ..... **IV**

LIST OF ATTACHMENTS ..... **V**

SECTION 1 INTRODUCTION **1**

SECTION 2 PERMIT REQUIREMENT ELEMENTS **2**

SECTION 3 FERTILIZER USE, STORAGE, AND DISPOSAL **4**

3.1 CURRENT FERTILIZER USE 4

3.2 FERTILIZER STORAGE 5

3.3 FERTILIZER DISPOSAL 6

SECTION 4 LAWN & LANDSCAPING MAINTENANCE **7**

4.1 CURRENT LAWN & LANDSCAPING PRACTICES 7

4.2 DISPOSAL OF LAWN CLIPPINGS 7

4.3 ALTERNATIVE LANDSCAPING MATERIALS 7

SECTION 5 TRASH RECEPTACLES & PET WASTE **8**

5.1 PUBLIC TRASH OPERATIONS 8

5.2 PET WASTE 8

SECTION 6 CATCH BASIN CLEANING PROGRAM **9**

6.1 EXISTING CATCH BASIN CLEANING PROGRAM 9

6.2 CATCH BASIN MAPPING AND INSPECTIONS 9

6.3 CATCH BASIN STRUCTURE PRIORITY RANKING 10

SECTION 7 STREET SWEEPING PROGRAM **12**

7.1 EXISTING STREET SWEEPING PROGRAM 12

7.2 STREET SWEEPING PRIORITY RANKING 12

SECTION 8 BMP MAINTENANCE **14**

8.1 PROPRIETARY SUBSURFACE SEPARATORS 14

8.2 STORMWATER BASINS 15

8.3 WATER QUALITY SWALES 16

8.4 DRY WELLS 17

8.5 OTHER STORMWATER BEST MANAGEMENT PRACTICES 17

SECTION 9 STREET SWEEPING & CATCH BASIN CLEANINGS **19**

9.1 STREET SWEEPINGS 19

9.2 CATCH BASIN CLEANINGS 20

SECTION 10 WINTER ROAD MAINTENANCE 21
10.1 SAND USE 21
10.2 DEICING CHEMICAL USE 22
10.3 STORAGE OF SAND AND DEICING CHEMICALS 22
10.4 SNOW DISPOSAL ACTIVITIES 23
SECTION 11 VEHICLES AND EQUIPMENT 25
11.1 VEHICLE AND EQUIPMENT MAINTENANCE 25
11.2 VEHICLE AND EQUIPMENT WASHING 26
11.3 EMPLOYEE TRAINING 26
SECTION 12 FACILITY AUDIT 27
SECTION 13 REPORTING AND RECORDKEEPING 28
SECTION 14 TRAINING 29
14.1 TRAINING LEAD 29
14.2 TRAINING PLAN 29
SECTION 15 MEASUREMENT OF SUCCESS 31
SECTION 16 REFERENCES 32

LIST OF FIGURES

Figure 1: Parks and Open Space Maintenance

Figure 2: Street Sweeping Prioritization

Figure 3: Storage Location of Street Sweepings & Catch Basin Cleanings

Figure 4: Storage Location of Salt and Sand Supplies

Figure 5: Storage Location of Snow Stockpile

LIST OF APPENDICES

Appendix A: Town of Rockland Urbanized Area & Impaired Waterbodies Map;

Town of Rockland Massachusetts Year 2016 Integrated List of Waters

Appendix B: Catch Basin Inspection Form Template

Appendix C: Stormwater BMP Inspection Form Template

Appendix D: Inventory of Stormwater Best Management Practices

Appendix E: Standard Operating Procedures (SOPs)

Appendix F: Facility Audit Findings and Recommendations

Appendix G: Stormwater Infrastructure Map

Appendix H: Street and Parking Lot Sweeping Log

LIST OF ATTACHMENTS

Attachment 1: Town of Rockland Mapbook

SECTION 1 INTRODUCTION

This Stormwater Operation & Maintenance (O&M) Plan has been prepared by the Town of Rockland 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 Rockland 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 Rockland 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 of Rockland. 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 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 of Rockland departments or 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 the Town of Rockland operations, and its use is applied throughout the Department, as listed below:

Department	Supervisor
Highway	David P. Taylor Jr.
Park	Peter Ewell

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 of Rockland maintains its public spaces and parks utilizing subcontractors to periodically fertilize some Town-owned land. The list of public facilities currently maintained by the Parks Department or other departments include: Town Hall, Fire Department, Police Department, Recycling Center, Highway Department, Robert J. Nyman Rockland Senior Center, Park Department, Abington & Rockland Joint Water Department, Sewer Department, Memorial Library, Community Center, Rockland Preschool/Middle School/High School Complex, R. Stewart Esten Elementary School, Jefferson Elementary School, Memorial Park Elementary School Hartstuff Park, Lower Oval Field, Reed Street Field, Memorial Stadium, [verify] (see attached Figure 1).

3.1 CURRENT FERTILIZER USE

The Town of Rockland currently uses fertilizers on Memorial Stadium, the softball field at Memorial Park School, Lower Oval Field, and Reed Street Field. The Town of Rockland only uses [insert fertilizer type/brand name], and typically sprays it the day of purchase. The fertilizer is applied by the Town on Memorial Stadium and the softball field; the Town of Rockland hires subcontractors to apply fertilizers to Lower Oval Field and Reed Street Field. The Town also uses [insert herbicide type/brand name] and [insert pesticide type/brand name] on all the parks that receive fertilizer.

The Town of Rockland 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, or
    - 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 of Rockland typically applies fertilizer the day of purchase and, therefore, there is no current need to store fertilizers. Small quantities of pesticides and herbicides are stored at the Parks Department maintenance facility. The chemicals are stored [describe the shelf/cabinet or other position of storage] within [describe the room]. This room does not have a floor drain [verify].

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 of Rockland does not dispose of fertilizers. All fertilizers purchased are utilized.

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 Parks Department maintains the Town of Rockland's public spaces and parks. The list of public spaces currently maintained by the Town of Rockland include: Town Hall, Fire Department, Police Department, Recycling Center, Highway Department, Council on Aging, Park Department, Water Department, Sewer Department, Sanitary Landfill, Memorial Library, Housing Authority, Youth Commission, Hartstuff Park, Lower Oval Field, Reed Street field, Rockland Preschool, R. Stewart Esten Elementary School, Jefferson Elementary School, Memorial Park Elementary School, Memorial Stadium, John W. Rogers Middle School, Rockland High School (see attached Figure 1).

4.1 CURRENT LAWN & LANDSCAPING PRACTICES

The Town of Rockland currently maintains a mowing and landscaping schedule through the Parks 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 performs these services, and mows all lawns weekly and mows irrigated field up to three times a week from April through November. The Town of Rockland 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 of Rockland mulches all lawn clippings generated by the mowed areas.

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 of Rockland 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 Parks Department currently maintains the trash receptacles at the Memorial Stadium, Lower Oval Field, Reed Street Field, Hartstuff Park, [add other Town parks with trash cans]. Additionally, the Highway Department and the Parks Department jointly maintain 12 trash receptacles at Rockland's town center, along Union Street. The trash is collected and deposited into [insert where trash is deposited] weekly. Trash receptacles at fields are emptied up to three times a week, depending on usage.

The Town of Rockland 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 and waste receptacles installed at three stations along the Hanover Branch Rail Trail and would like to introduce signage to parks and open spaces. The Town of Rockland will work with Town Departments (Highway, Parks) to discuss these objectives, with the goal of installing them 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 Rockland'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 of Rockland with the assistance of a subcontractor currently runs its catch basin cleaning program once per year, visiting all of its catch basins annually, typically in early spring. The Town performs the catch basin cleanings using a Stetco crane truck with claw removal system. The subcontractors utilize a vacuum/jet truck. Historically, Rockland has had issues with sediment and debris build-up in their catch basin structures along the north side of Manzella Court, the south side of Nevens Circle, and near 392 Forest Street. Thus, these areas receive more frequent cleanings to help relieve flooding issues. The Town of Rockland has had no flooding issues in other parts of Town and has not allowed sediment to build up in their catch basins beyond 50% full. This is primarily due to Rockland's mandate that all Town catch basins are cleaned regularly. Also, the Town cleans out manhole structures that have historic sediment buildup.

6.2 CATCH BASIN MAPPING AND INSPECTIONS

There are 1,833 catch basins throughout the Town of Rockland that have been previously mapped in the MS4 area (2000 + 2010 Census) in Geographic Information System (GIS) format using historic aerial flyover data, handheld GPS units, and employee knowledge. A Town-wide mapbook has been

prepared showing unique catch basin identifiers (e.g. 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 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/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/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 1/2 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 Town of Rockland 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 of Rockland currently runs their street sweeping program once per year, sweeping 65 miles of roads annually in early spring. Additionally, main roads are swept weekly from spring to fall. The department currently utilizes work orders 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, (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 Town-owned yard located behind the Recycling Center and are used by the Town as fill after mixing it with reclaimed material. A Town-wide GIS map will be drafted to display the designated priority zones to aid the Town to prioritize street sweeping and planning for future activities. Refer to Section 9.1 for proper street sweeping material storage protocol.

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. Inspection form templates for stormwater BMPs are attached as Appendix C.

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. The Town of Rockland has subsurface separators within its MS4 System at the Parks Department, Water Department, and Fire Department.

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 is currently developing an inventory of its stormwater basins within its MS4 and will be mapping them in GIS this year.

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. Dry wells 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 of Rockland's Street Sweeping and Catch Basin Cleanings materials. Rockland has traditionally disposed of catch basin cleanings and street sweepings at a Town–owned yard located behind the Recycling Center (see Figure 3). The procedures required for properly managing these materials are further described below and in the SOP's attached as Appendix E. Also, a street and parking lot sweeping log is attached in Appendix H.

9.1 STREET SWEEPINGS

The Town's street sweeping operations are mainly conducted once a year in the spring, with main roads being swept weekly from spring to fall. The street sweepings are subsequently brought back to the Town-owned yard behind the Recycling Center to the designated street sweeping stockpile area (Figure 3) and are currently being stored there for eventual mixing with reclaimed material and reuse as fill material. The annual amount generated is approximately 40-60 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 be at a site where the sweepings are generated.
- Storage must be at a location, such as the Highway Department 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 a year in the spring [verify]. The cleanings are subsequently brought back to the Town-owned yard behind the Recycling Center at the catch basin cleanings stockpile area located (Figure 3). The annual amount generated is approximately 40-60 tons.

Figure 3 also shows the location of the catch basin cleanings storage area and the proximity to localized wetlands and waterbodies surrounding the storage area; unnamed wetlands are adjacent to the storage area, but due to site topography and the distance present, 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 ensure 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 involve 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 of Rockland applies salt to three quarters of Town roads and a 50% salt and 50% sand mixture to the other one quarter of Town roads. 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.

De-icing and anti-icing strategies should be used in lieu of sand when appropriate.

10.3 STORAGE OF SAND AND DEICING CHEMICALS

The Town stores salt in a covered shed at the Highway Department. Sand is also stored at the Highway Department with cement berms around three sides of the stockpile. Calcium chloride deicing material is stored in bags within 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 Superintendent to ensure that runoff is minimized. All findings during an inspection shall be sent to the Highway Department.

Figure 4 shows the location of the sand and salt storage areas and the proximity to localized wetlands and waterbodies surrounding the storage area.

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 Town disposes of snow at Hartstuff Park on Hingham Street (Figure 5). [Insert any relevant additional details]

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 down-gradient 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 at the Rockland Highway Garage. 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 Rockland Highway Garage. 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 vehicle 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:

- Schools
- Town-owned offices
- Police and Fire Stations
- Municipal pools
- Parking garages
- Parks and open spaces
- Vehicle storage areas

Facilities in the Town of Rockland to be audited include, but are not limited to, Rockland Public Schools, Town Hall, Police Department, Fire Department, Community Center, Robert J. Norman Rockland Senior Center, Highway Department, Park Department, Water Department, Sewer Department, Recycling Center, Memorial Library, Community Center, Millbrook Park, Rockland Ice Rink, and Mark Bavis Arena.

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. Facility audit findings and recommendations from June 2020 are attached in Appendix F.

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 the Highway Department Administration Office 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.

[Insert description of how Client currently maintains records – paper copies or digitally]

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, the job training will be managed by the Highway Superintendent. He/she will manage and assign training as described below.

The Town of Rockland shall, at a minimum, annually train all Highway Department 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 of Rockland may elect to retain consultants for development of the O&M structure database, and associated mapping tasks. Preliminary training activities 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.
Proper inspection and maintenance	Town staff who inspect and maintain	Min. once per year	As described in Section 2.3.7.a.iii.6 of the Permit, this training will cover proper

Training Topic	Attendees	Frequency	Description
of stormwater Best Management Practices	stormwater Best Management Practices		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

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

N

HINGHAM

NORWELL

WEYMOUTH

HANOVER

ROCKLAND

ABINGTON

WHITMAN

HANSON

Hartstuff Park

Recreation Center Complex

Youth Commission

Public School Day Care

Memorial Library

Rockland High School and Rogers Middle School

Fire Department

Reed Street Field and Lower Oval Field

Town Hall

Memorial Stadium

Park Department

Memorial Park Elementary School

Police Station

Senior Center

Jefferson Elementary School

Highway Department

Housing Authority

Water Department

R. Stewart Esten Elementary School

Sewer Commission

Recycling Center and Sanitary Landfill

Miles

0 0.5 1

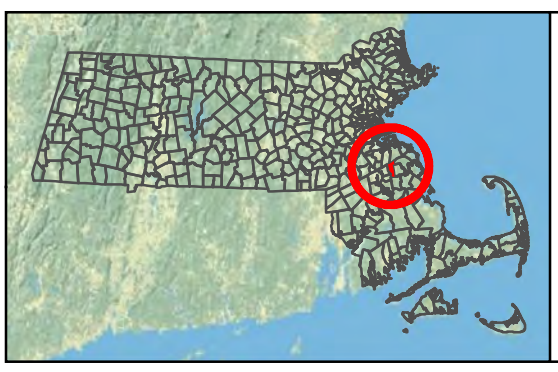


Figure 1. Parks & Open Space Maintenance
Rockland, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Figures\MXDs\Parks & Open Space Maintenance.mxd

FIGURE 2

Street Sweeping Prioritization

HINGHAM

NORWELL

WEYMOUTH

ABINGTON

ROCKLAND

HANOVER

HANSON

N

All Roads Swept

Priority Road

Miles

0 0.5 1

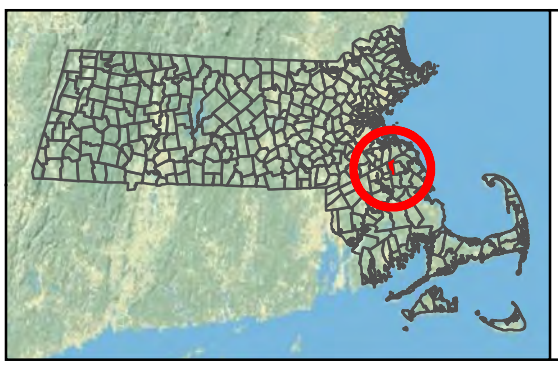


Figure 2. Street Sweepings Prioritization
Rockland, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Figures\MXDs\Street Sweeping Prioritization.mxd

FIGURE 3

Storage Location of Street Sweepings & Catch Basin Cleanings

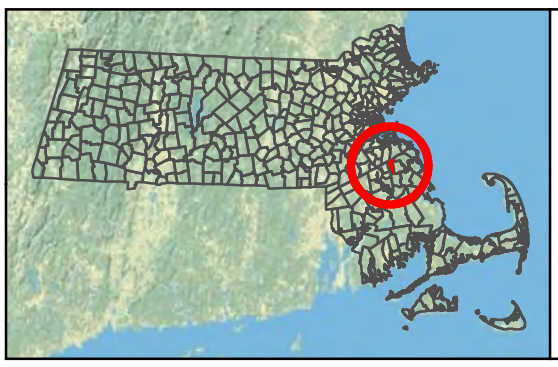


Figure 3. Storage Location of
Street Sweepings & Catch Basin Cleanings
Rockland, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Figures\MXDs\SS & CB Cleanings Storage.mxd

FIGURE 4

Storage Location of Salt and Sand Supplies

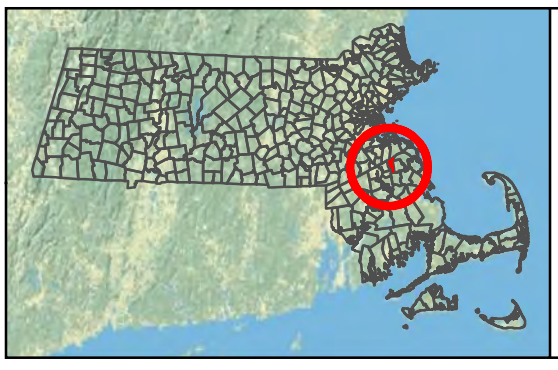


Figure 4. Storage Location of Salt and Sand Supplies
Rockland, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Figures\MXDs\Salt & Sand Storage.mxd

FIGURE 5

Storage Locations of Snow Stockpile

N

Snow Stockpile

Hingham Street

Hartstuff Park

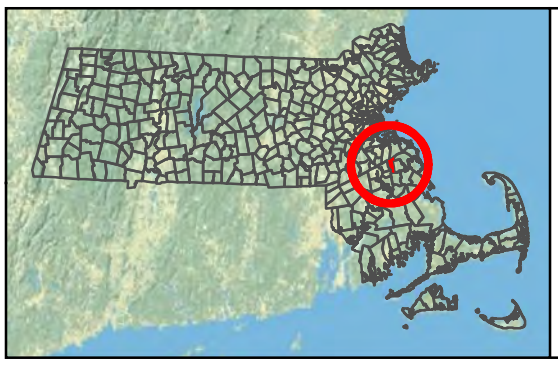
Hartstuff Street

Town Parcels

Pond, Lake, Ocean

Feet

0 50 100 200



TOWN OF ROCKLAND INC. A.D. 1874 MASS. HATHERLY GRANT 1656 ABINGTON 1712

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

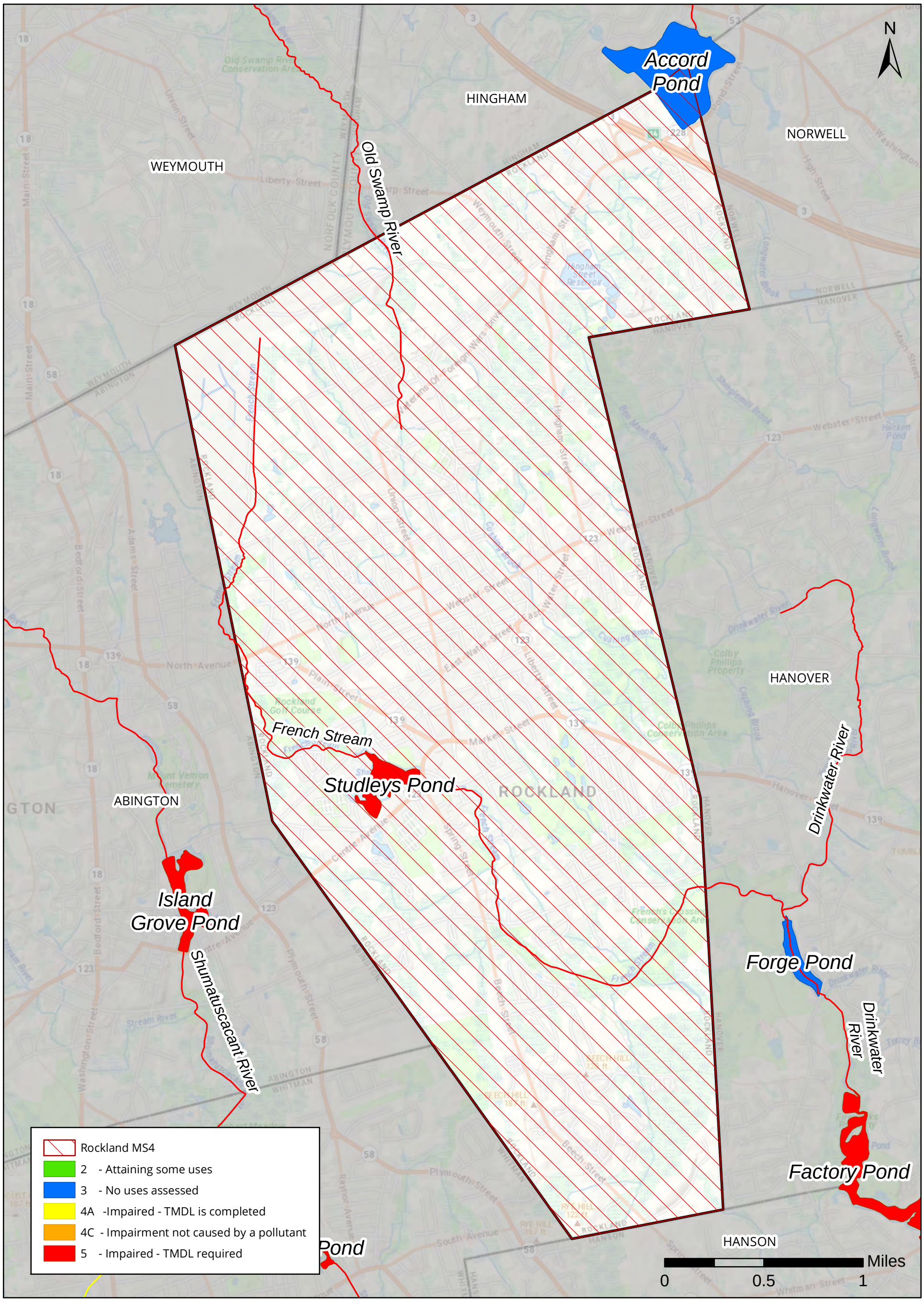
ENVIRONMENTAL PARTNERS

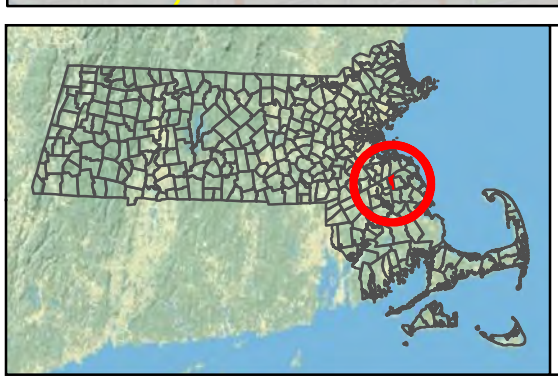
I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Figures\MXDs\Snow storage.mxd

APPENDIX A

Town of Rockland Urbanized Area & Impaired Waterbodies Map

Town of Rockland Massachusetts Year 2016 Integrated List of Waters





TOWN OF ROCKLAND INC. A.D. 1874 MASS. HATHERLY GRANT 1656 ABINGTON 1712

Appendix A. Urbanized Area & Impaired Waterbodies Map
Rockland, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Appendices\AppA - Urbanized Area & Impaired Waters_3.mxd

ENVIRONMENTAL PARTNERS

Town of Rockland, Massachusetts

Massachusetts Year 2016 Integrated List of Waters

Category	Name	Segment ID	Description	Size	Units	Impairment Cause
5 – "Water Requiring a TMDL"	**Old Swamp River**	MA74-03	Headwaters west of Pleasant Street and north of Liberty Street, Rockland to inlet Whitmans Pond, Weymouth.	4.60	MILES	E. Coli Fecal Coliform
	Cushing Brook	MA94-40	Headwaters east of Pleasant Street, Rockland to mouth at confluence with Drinkwater River, Hanover.	3.10	MILES	E. Coli
	French Stream	MA94-03	Headwaters on the southeast side of the South Weymouth Naval Air Station, Rockland to mouth at confluence with Drinkwater River, Hanover.	5.80	MILES	Dissolved Oxygen E. Coli Fecal Coliform Fish Bioassessments Phosphorus, Total Whole Effluent Toxicity (WET)
	Studleys Pond	MA94151	Rockland.	25.00	ACRES	Fecal Coliform

APPENDIX B

Catch Basin Inspection Form Template

Job No.: _____ **Town:** Rockland

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:

Color:	
Odor:	

Weather Conditions : Dry > 24 hours ☐ Wet ☐

Sample of Screenings Collected for Analysis? Yes ☐ No ☐

Comments:

Circle those present:

Foam	Oil Sheen
Sanitary Waste	Bacterial Sheen
Orange Staining	Floatables
Excessive sediment	Pet Waste
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 ☐	

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 D

Inventory of Stormwater Best Management Practices

ENVIRONMENTAL PARTNERS

Town of Rockland, Massachusetts
Inventory of Stormwater Best Management Practices (BMPs)

BMP ID	Location	BMP Category	BMP Type

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 (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.

Catch basin cleanings collected by the Town of Rockland 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

See Catch Basin Inspection Forms located in Appendix B

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

See BMP inspection forms located in Appendix C

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

See OWS Quarterly Inspection Checklist located in Appendix C

ENVIRONMENTAL PARTNERS

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 Division General Foreman to report leaks in sheds/tanks and other problems to the Director of Operations. It is the Highway Division'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 Director of Operations 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 DPW Highway Division General Foreman or designee to ensure that runoff is minimized. All findings during an inspection shall be sent to the DPW Director of Operations.

ENVIRONMENTAL PARTNERS

STANDARD OPERATING PROCEDURE 5:

THE HANDLING AND STORAGE OF STREET SWEEPINGS

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 DPW contractors. DPW 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 DPW property.

Responsibility

It is responsibility of the DPW Highway Division General Foreman and his designee (DPW 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 #BAW-18-001 “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 the DPW Yard 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 DPW Director of Operations

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 #BAW-18-001 “Reuse and Disposal of Street Sweepings”

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

REUSE AND DISPOSAL OF STREET SWEEPINGS

DEPARTMENT OF ENVIRONMENTAL PROTECTION

POLICY # BAW-18-001

(SUPERSEDES POLICY # BWP-94-092)

This Policy provides guidance to the regulated community about the Department of Environmental Protection's requirements, standards, and approvals for handling reuse or disposal of street sweepings. This Policy supersedes Department Policy BWP-94-092.

5/14/18
Date

Christine Kirby
Assistant Commissioner

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep
Printed on Recycled Paper

POLICY #BAW-18-001
TABLE OF CONTENTS

		Page
1.	Policy Statement and Scope	1
2.	Applicability	1
3.	Definitions	2
4.	Handling	2
4.1	Collection of Street Sweepings	2
4.2	Storage	2
4.3	Preparation Prior to Use	3
5.	Approved Uses, Restrictions & Conditions - No Prior Approval Needed from MassDEP	3
5.1	Use at Landfills	3
5.2	Use as Fill in Public or Private Ways and Parking Lots	3
5.3	Use as Additive to Restricted Use Compost	4
5.4	Reuse as Anti-Skid Material	4
5.5	Reuse at Landfills Regulated Under MassDEP Policy #COMM-97-001	5
5.6	Use at Reclamation Soil Facilities Regulated Under MassDEP Policy #COMM 15-001	5
6.	Approved Use, Restrictions & Conditions - Prior Approval Needed from MassDEP	6
6.1	Use as Bulking Agent for Wastewater Sludge or Septage Disposal	6
7.	Other Uses	6
8.	Disposal	6
9.	Record Keeping	6
10.	Additional Information	7

1. Policy Statement and Scope

This Policy explains MassDEP requirements for managing Street Sweepings. Street Sweepings are "solid waste" subject to the Massachusetts solid waste regulations. The options for managing Street Sweepings are as follows.

- Use the Street Sweepings in accordance with the preapproved uses described in Section 4 of this policy.
- Use the Street Sweepings for a beneficial use not included in the list of preapproved uses after obtaining a permit from MassDEP under the provisions of the solid waste regulations, 310 CMR 19.060, Beneficial Use of Solid Wastes.
- Dispose of Street Sweepings at a permitted solid waste landfill.

2. Applicability

This policy applies to the reuse or disposal of Street Sweepings that are generated in the ordinary and customary cleaning of roadways and parking lots. This policy does not apply to catch basin cleanings or Street Sweepings mixed with catch basin cleanings or any other type of wastes. The disposal and reuse of catch basin cleanings is discussed in the "Management of Catch Basin Cleanings" Fact Sheet issued by the MassDEP (https://www.mass.gov/lists/massdep-solid-waste-policies-guidance-fact-sheets).

This policy does not apply to the material generated as the result of the clean-up of an oil or hazardous material spill. However, Street Sweepings that are generated in the ordinary and customary maintenance of roadways and parking lots are not exempt from the Hazardous Waste Regulations, 310 CMR 30.000, and must be handled as hazardous waste when they exhibit any of the characteristics of a hazardous waste. If there is no evidence of unusual contamination, MassDEP does not require Street Sweepings to be routinely tested, but, as is the case with any waste, the generator has the ultimate responsibility for determining whether the waste is a hazardous waste.

Although Street Sweepings are not considered soil, they may be managed under Policy #COMM-97-001, "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills", in accordance with Section 5.5 of this policy.

3. Definitions

This section contains definitions of the important terms used in this Policy.

Department or *MassDEP* means the Massachusetts Department of Environmental Protection.

Parking lots mean publicly or privately owned paved areas that provide access for the general public to park their car while patronizing retail or service businesses. Parking lots also include the paved areas used by the employees at office parks and businesses.

Private way means the strip of land over and under a privately owned, paved road or highway.

Public way means the strip of land over and under a publicly owned, paved road or highway and includes the publicly owned land adjacent to the road or highway.

Street Sweepings means materials consisting primarily of sand and soil generated during the routine cleaning of roadways or parking lots but may also contain some leaves and other miscellaneous solid wastes collected during street sweeping. Street Sweepings do not include the material generated during the clean-up of a spill or material from other structures associated with a roadway such as catch basins.

Urban center roads mean local roads in central commercial and retail business districts and industrial and manufacturing areas.

4. Handling

4.1 Collection of Street Sweepings

Although MassDEP does not regulate the collection of Street Sweepings, collection practices should be compatible with intended uses. Keeping sweepings from Urban Center Roads separate from sweepings from other areas will provide the generator of the Street Sweepings with the most options under this policy.

This policy does not cover sweepings known to be contaminated by spills, and such sweepings should be collected separately and kept segregated. Depending on the contamination and circumstances, the handling of contaminated sweepings may be governed by the Massachusetts Contingency Plan, 310 CMR 40.0000, the Massachusetts Hazardous Waste Regulations, 310 CMR 30.000, the Massachusetts Site Assignment Regulations for Solid Waste Facilities, 310 CMR 16.00 or the Massachusetts Solid Waste Management Facility Regulations, 310 CMR 19.000.

4.2 Storage

Street Sweepings shall be temporarily stored prior to use, only when the following conditions are satisfied:

- Storage must be:
    - at the site where the sweepings are generated (e.g. at a parking area that was swept);
    - at a location, such as a Department of Public Works (DPW) yard, that is under the control of the governmental entity doing the sweeping or has contracted for the sweeping; or,

  - at other locations with prior written approval from the appropriate MassDEP Regional Office.
- The Street Sweepings shall be protected from wind and rain to the extent necessary to prevent dust, erosion, and off-site migration;
- The Street Sweepings shall not be stored within the 100 foot buffer zone of a wetland or within wetland resource areas including bordering vegetative wetlands and riverfront areas;
- The Street Sweepings shall not be stored within 500 feet of a ground or surface drinking water supply;
- Storage of the Street Sweepings shall incorporate good management practice and result in no public nuisance; and
- Storage of the Street Sweepings must be temporary. Street Sweepings shall be used within one year of collection unless the MassDEP Regional Office where the Street Sweepings are stored grants a written extension. An extension may be granted when it is demonstrated that all storage conditions will continue to be satisfied and the stored Street Sweepings will be put to a specific identified use prior to the expiration of the extension period.

4.3 Preparation Prior to Use

Solid waste, such as paper, auto parts and other trash, shall be removed from all Street Sweepings prior to use. Solid waste screened from the Street Sweepings shall be disposed of at a permitted solid waste facility. Leaves, twigs and other organic matter should also be removed when good engineering practice indicates this is necessary to produce a material that is suitable for the intended use.

5. Approved Uses, Restrictions & Conditions-No Prior Approval Needed from MassDEP

This policy allows Street Sweepings to be used in several applications. An approval from MassDEP is not required when the restrictions and conditions are adhered to as identified in this policy. However, Street Sweepings shall not be used unless prior approval is obtained from the owner of the location where the sweepings are to be used.

5.1 Use at Landfills

Street Sweepings may be used for daily cover at permitted lined solid waste landfills and need no prior MassDEP approval if the Street Sweepings satisfy the requirements for daily cover material specified at 310 CMR 19.130(15). A list of active permitted solid waste landfills can be found on the MassDEP website.

5.2 Use as Fill in Public or Private Ways and Parking Lots

Street Sweepings may be used for fill in public and private ways and parking lots without prior approval from MassDEP only when the following additional restrictions and conditions are observed:

- The Street Sweepings have not been collected from Urban Center Roads (see definition);
- Any collection, storage, or preparation for use of the Street Sweepings shall be in accordance with Sections 4.1 and 4.2 of this policy.
- The Street sweepings have been screened to remove all debris and solid waste and all debris/solid waste screened from the sweepings shall be disposed at a permitted solid waste facility (see Section 8);
- The Street Sweepings are kept above the level of the groundwater;
- The Street Sweepings are not used in designated "No Salt Areas";

- The Street Sweepings are not used within the 100 foot buffer zone of a wetland or within wetland resource areas including bordering vegetative wetlands and riverfront areas;
- The Street Sweepings are not used within 500 feet of a ground or surface drinking water supply;
- In public ways the Street Sweepings are used under the paved road surface or, except in residential areas, as fill along the side of the road within the public way;
- In private roadways or in residential areas the Street Sweepings are used only under the paved road surface; and
- In parking lots the Street Sweepings are used only under the paved parking surface.

5.3 Use As an Additive to Restricted Use Compost

Street Sweepings may be used as an additive to compost without prior written approval from MassDEP only when the following additional restrictions and conditions are observed:

- The Street Sweepings have not been collected from Urban Center Roads (see definition);
- Any collection, storage, or preparation for use of the Street Sweepings shall be in accordance with Sections 4.1 and 4.2 of this policy.
- The Street Sweepings have been screened to remove all debris and solid waste and all debris and solid waste screened from the sweepings is disposed at a permitted solid waste facility (see Section 8);
- The compost is used only along public ways and parking lot areas;
- The compost is not used in residential areas;
- The compost is kept above the level of the groundwater;
- The compost is not used in designated "No Salt Areas";
- The compost is not used within the 100 foot buffer zone of a wetland or within wetland resource areas including bordering vegetative wetlands and riverfront areas; and
- The compost is not used within 500 feet of a ground or surface drinking water supply.

5.4 Reuse as Anti-Skid Material

Street Sweepings may be used as a component to anti-skid material (e.g. street sanding material) without prior written approval from MassDEP only when the following additional restrictions and conditions are observed:

- The Street Sweepings have not been collected from Urban Center Roads (see definition);
- Any collection, storage, or preparation for use of the Street Sweepings shall be in accordance with Sections 4.1 and 4.2 of this policy;
- The Street Sweepings have been screened to remove all debris and solid waste and all debris and solid waste screened from the Street Sweepings is disposed at a permitted solid waste facility (see Sections 8);
- The anti-skid material/Street Sweepings are not used in designated "No Salt Areas";
- The anti-skid material/Street Sweepings are not used within the 100 foot buffer zone of a wetland or within wetland resource areas including bordering vegetative wetlands and riverfront areas; and
- The anti-skid material/Street Sweepings are not used within 500 feet of a ground or surface drinking water supply.

The use of Street Sweepings as anti-skid material in accordance with this policy is not a determination of the efficacy of the material for this purpose. Proper engineering review should be done to ensure the material works as intended.

5.5 Reuse at Landfills Regulated Under MassDEP Policy #COMM-97-001

Street Sweepings may be reused at a permitted Massachusetts landfill and need no prior written MassDEP approval if the sweepings have been adequately characterized pursuant to the MassDEP Policy #COMM-97-001 and the Street Sweepings have been screened to remove debris and solid waste.

All screened debris and solid waste removed from Street Sweepings shall be disposed of at a permitted solid waste facility. Street Sweepings for use at the landfill may contain only incidental, randomly dispersed, de minimis quantities of ash and/or Solid Waste as defined in 310 CMR 16.000 and 310 CMR 19.000, which collectively shall comprise less than 1% by volume of the Street Sweeping materials, as determined by visual inspections. Any Street Sweeping materials approved and brought onto the landfill property for use at the landfill shall contain no more than 5% (by volume) of Asphalt Pavement, Brick, and Concrete ("ABC") material (as defined in 310 CMR 19.000), as determined by visual inspection. Any such material must measure less than 6 inches in any dimension.

Persons who wish to send Street Sweepings to a landfill must comply with MassDEP Policy #COMM-97-001 which requires sampling of the Street Sweepings to demonstrate that the Street Sweepings meet the standards listed in the Policy.

5.6 Use at Reclamation Soil Facilities Regulated Under MassDEP Policy # COMM-15-01

Street Sweepings may be used for fill at a permitted Reclamation Soil Facility (the Facility) and need no prior written MassDEP approval if the Street Sweepings have been adequately characterized pursuant to the Facility-specific Soil/Fill Management Plan and the Street Sweepings have been screened to remove debris and solid waste.

All screened debris and solid waste removed from Street Sweepings shall be disposed of at a permitted solid waste facility. Street Sweepings for use at the Facility may contain only incidental, randomly dispersed, de minimis quantities of ash and/or Solid Waste as defined in 310 CMR 16.000 and 310 CMR 19.000, which collectively shall comprise less than 1% by volume of the Street Sweeping materials, as determined by visual inspections. Any Street Sweeping materials approved and brought onto the property for use at the Facility shall contain no more than 5% (by volume) of ABC material, as determined by visual inspection. Any such material must measure less than 6 inches in any dimension.

Pursuant to Policy # COMM-15-01, persons who wish to send Street Sweepings to a Facility must sample and analyze the Street Sweepings as required by the Facility's Soil/Fill Management Plan and demonstrate that the Street Sweepings meets the Facility's acceptance criteria. Unless specifically addressed in a Facility's Soil/Fill Management Plan, a minimum sampling frequency of 1 sample per 100 cubic yards is required for characterization of Street Sweepings originating from Urban Center Roads. Street Sweepings originating from non-Urban Center Roads may be sampled at a minimum of 1 sample per 500 cubic yards. Regardless of its point of origin, if the total quantity of Street Sweepings is less than 100 cubic yards, a minimum of one composite sample is required for characterization of the material. A list of active permitted Reclamation Soil facilities may be found at https://www.mass.gov/soil-transport-re-use-and-disposal.

6. Approved Use, Restrictions & Conditions- Prior Approval Needed from MassDEP

This policy allows Street Sweepings to be used in several applications. Prior written approval from MassDEP is required when using the Street Sweepings as identified in this section of the policy. In addition, Street Sweepings shall not be used at a location until prior written approval is obtained from the owner of the location where the Street Sweepings are to be used.

6.1 Use as a Bulking Agent for Wastewater Sludge or Septage Disposal

Street Sweepings may be used as a bulking material for wastewater treatment plant sludge or septage when the mixed material will be disposed in a permitted lined or unlined sludge or septage landfill in compliance with MGL Chapter 21, Sections 26-53 and MGL Chapter 83 Sections 6 & 7 provided that the appropriate MassDEP Regional Office's Bureau of Water Resources has granted prior written approval.

7. Other Uses

Any use not approved in this policy requires a MassDEP permit under the Beneficial Use provisions of the Solid Waste Management Facility Regulations at 310 CMR 19.060. A "Beneficial Use Determination" (BUD) can be issued only after the submission of an application characterizing the waste and describing the proposed beneficial use.

8. Disposal

While the beneficial use of Street Sweepings is strongly encouraged, MassDEP does not prohibit the disposal of Street Sweepings. Street Sweepings may be disposed in permitted solid waste landfills without prior approval from the Department.

9. Record Keeping

Any entity using Street Sweeping for any use listed under sections 5.3 or 5.4 shall keep records for a period of three years of the source of the sweepings, the location of use and the amount of sweepings used.

10. Additional Information

For additional copies of this policy, permit application forms or other MassDEP documents, call any MassDEP Regional Office and ask for the Service Center or visit http://www.mass.gov/dep. The permit application numbers for Beneficial Use Determinations are BWP SW 39, 40, 41 and 42.

Copies of all Massachusetts regulations, including the solid waste regulations, are available at the MassDEP website and may also be purchased from the State House Bookstore at 617-727-2834. The solid waste regulations are:

- 310 CMR 16.000, Site Assignment Regulations for Solid Waste Facilities: and,
- 310 CMR 19.000, Solid Waste Management Facility Regulations.

If you have technical questions about the policy, please call any MassDEP Regional Office and ask to speak with a staff member in the solid waste program

APPENDIX F

Facility Audit Findings and Recommendations

ENVIRONMENTAL PARTNERS

September 15, 2020

Mr. Dave Taylor Jr.
Highway Superintendent
Town of Rockland
841 Market Street
Rockland, MA 02370

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

Dear Mr. Taylor,

In accordance with our July 2019 Contract Agreement for professional engineering services, Environmental Partners (EP) is forwarding this report on our audit of municipal facilities for compliance with the Town of Rockland'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 August 19th and 31st, EP staff performed facility audits at fourteen (14) municipal facilities owned and operated by the Town of Rockland. These facilities include:

- Rockland Community Center
- R. Stewart Esten Elementary School
- Fire Department
- Rockland Senior High School
- Highway Department
- Jefferson Elementary School
- Rockland Memorial Library
- Memorial Park Elementary School
- Police Department
- Robert J. Nyman Rockland Senior Center
- Sewer Department
- Town Hall
- Recycling Center
- Abington & Rockland Joint Water Department

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 at the Highway Department was the only interior space thoroughly audited.

The municipal facilities audited in the Town of Rockland 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 Rockland on this project. Should you have any questions or require additional information, please do not hesitate to us.

Sincerely,

Environmental Partners Group, Inc.
Scott D. Turner, PE, AICP, LEED AP ND
Director of Planning
P: 617.657.0280
E: sdt@envpartners.com

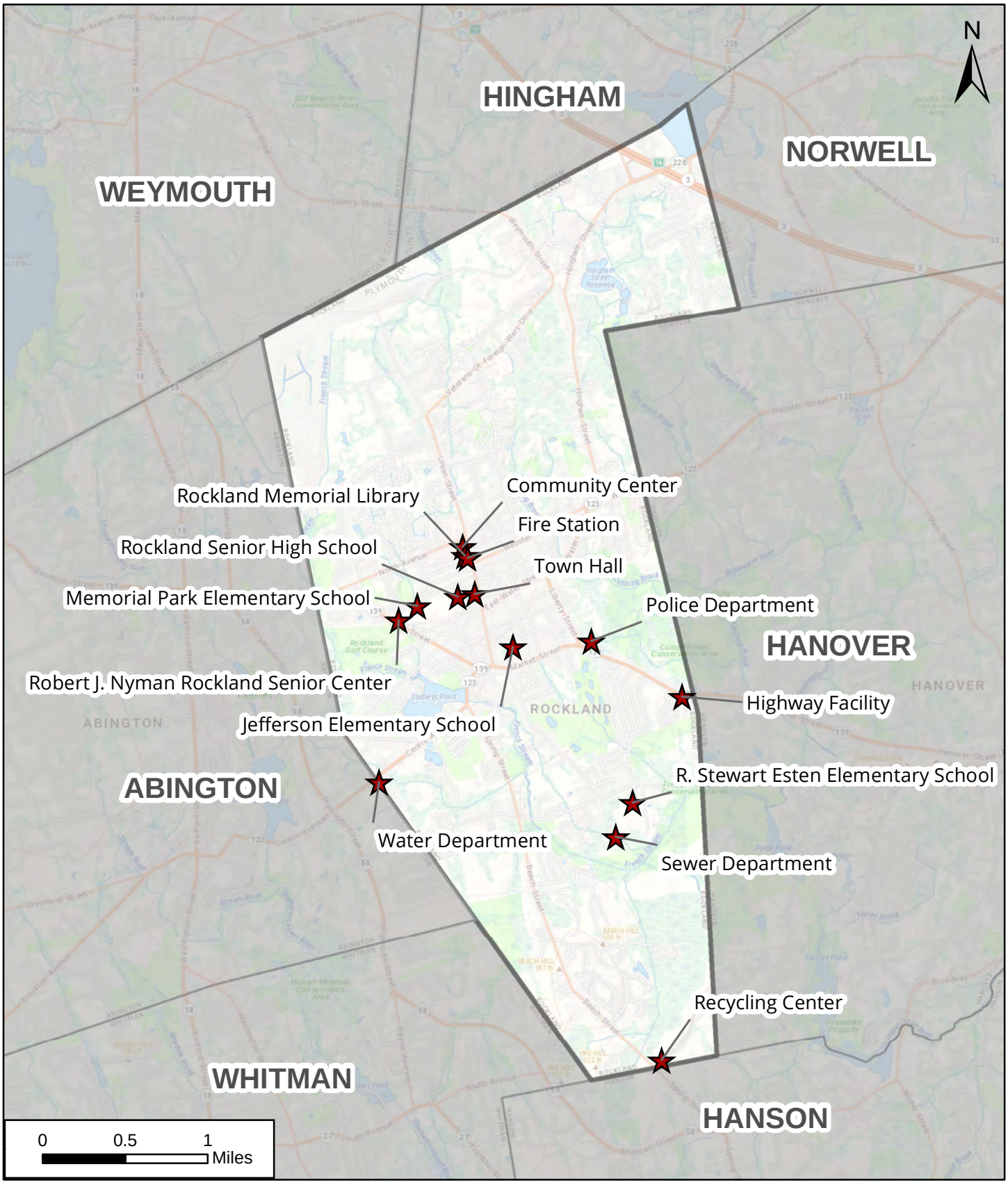
CC: Natalie M. Pommersheim, Environmental Partners
William M. Watts, Environmental Partners

Figures: 1. Municipal Facility Audit Map

Appendices: A. Municipal Facility Audit Summary
B. PDF Reports with Photo Documentation
C. A Summary of Requirements for Small Quantity Generators of Hazardous Waste

Figure 1:

Municipal Facility Audit Map



ENVIRONMENTAL PARTNERS

Figure 1
Municipal Facility Audit Map
Rockland,Massachusetts

I:\Rockland.183\Stormwater\Stormwater_2020\Facility Audits\Figures\MXDs\Figure 1 - Municipal Facility Audit Map.mxd

Appendix A:

Municipal Facility Audit Summary

ENVIRONMENTAL PARTNERS

Town of Rockland, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (August 19, 2020 and August 31, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Rockland Community Center	394 Union Street	Community Center	Dumpster uncovered.	Verify floor drain discharge location. Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
R. Stewart Esten Elementary School	733 Summer Street	School	N/A	N/A	N/A
Fire Department	360 Untio Street	Fire Station	N/A	N/A	N/A
Rockland Senior High School	52 Mackinlay Way	School	Dumpster uncovered.	Verify origin of pipe discharging to catch basin in grass in front of Goddard Ave. Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
Highway Department	841 Market Street	Highway Facility	N/A	Previously unmapped stormwater assets (MS4 Outfall, catch basins) 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 the flammables storage locker. Purchase additional storage lockers as needed.
Jefferson Elementary School	34 James Street	School	N/A	N/A	N/A
Rockland Memorial Library	20 Belmont Street	Library	N/A	Previously unmapped stormwater assets (manhole, catch basin) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Memorial Park Elementary School	1 Lt Col Brian Duffy Way	School	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
Police Department	490 Market Street	Police Station	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
Robert J. Nyman Rockland Senior Center	317 Plain Street	Senior Center	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Previously unmapped stormwater assets (catch basins, drain manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Remove fertilizers and other items from top of flammables storage locker.
Sewer Department	587 Summer Street	Sewer Facility	N/A	Previously unmapped stormwater catch basin was discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Town Hall	242 Union Street	School	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Previously unmapped stormwater assets (catch basins, drain manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Recycling Center	1000 Beech Street	Transfer Station	N/A	N/A	N/A
Abington & Rockland Joint Water Department	366 Centre Avenue	Water Department	N/A	Previously unmapped stormwater assets (catch basins, drain manholes, outfall) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

Appendix B:

PDF Reports and Photo Documentation

Community Center

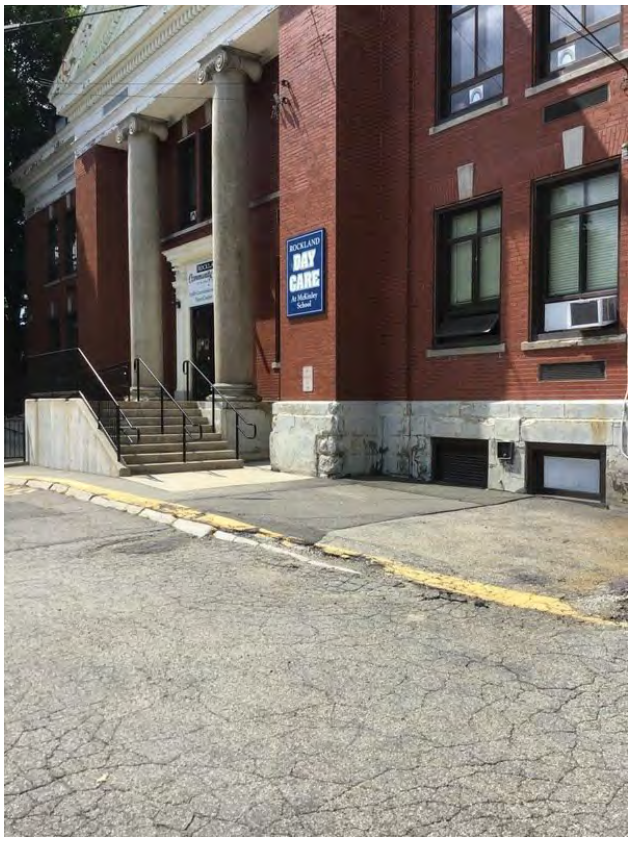
Created	2020-08-19 15:28:52 UTC by EPField 01
Updated	2020-08-19 15:39:13 UTC by EPField 01
Location	42.1329300321093, -70.9170779585838

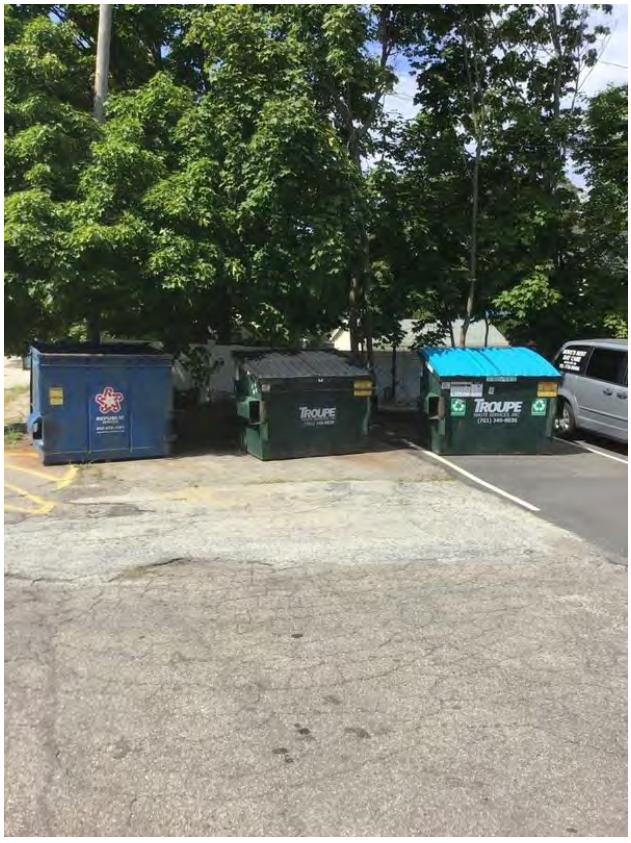
General

Client	Town of Rockland
Date	2020-08-19
Time	11:28
Address	394 Union St Rockland, MA 02370
Facility Type	Community Center

Inspection Information

Photos


ROCKLAND
DAY
CARE


TROUPE
TROUPE

DRAIN

School, R. Stewart Esten Elementary School

Created	2020-08-31 15:22:00 UTC by EPField 01
Updated	2020-09-01 14:38:33 UTC by EPField 01
Location	42.1103148967799, -70.8972316235304

General

Client	Town of Rockland
Date	2020-08-31
Time	11:22
Address	733 Summer St Rockland, MA 02370
Facility Type	School
Facility Name	R. Stewart Esten Elementary School

Inspection Information

Photos

CB 1

Fire Station, Rockland Fire Station

Created	2020-08-31 16:29:18 UTC by EPField 01
Updated	2020-09-01 14:04:23 UTC by EPField 01
Location	42.1319384577713, -70.9164898842573

General

Client	Town of Rockland
Date	2020-08-31
Time	12:29
Address	360 Union St Rockland, MA 02370
Facility Type	Fire Station
Facility Name	Rockland Fire Station

Inspection Information

Photos

FIRE-RESCUE
CALL
911
ROCKLAND

School, Rockland Senior High School

Created	2020-08-31 14:23:53 UTC by EPField 01
Updated	2020-09-01 14:30:40 UTC by EPField 01
Location	42.1285339675581, -70.9176781028509

General

Client	Town of Rockland
Date	2020-08-31
Time	10:23
Address	52 Mackinlay Way Rockland, MA 02370
Facility Type	School
Facility Name	Rockland Senior High School

Inspection Information

Photos

Highway Facility

Created	2020-08-19 17:02:10 UTC by EPField 01
Updated	2020-08-20 11:40:55 UTC by EPField 01
Location	42.1195945982282, -70.8912727609937

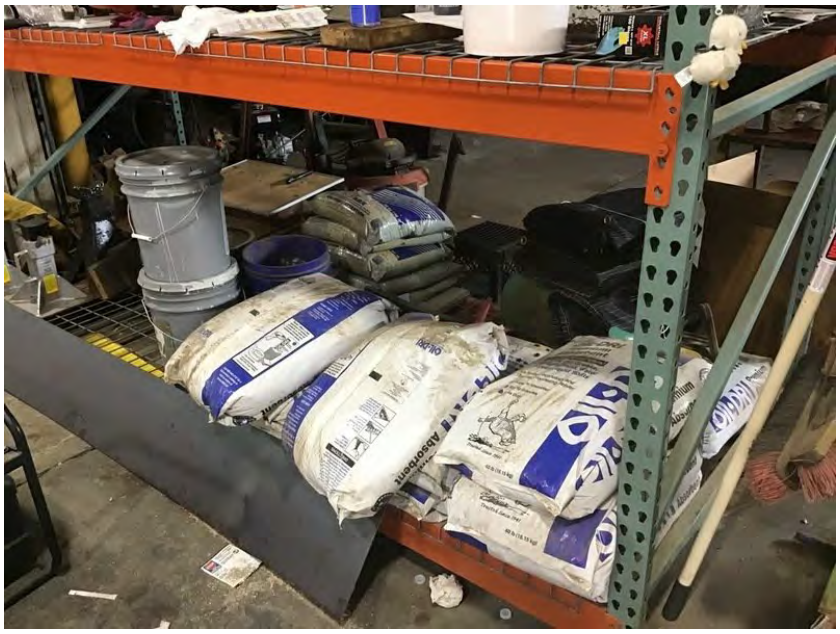
General

Client	Town of Concord
Date	2020-08-19
Time	13:02
Address	841 Market St Rockland, MA 02370
Facility Type	Highway Facility

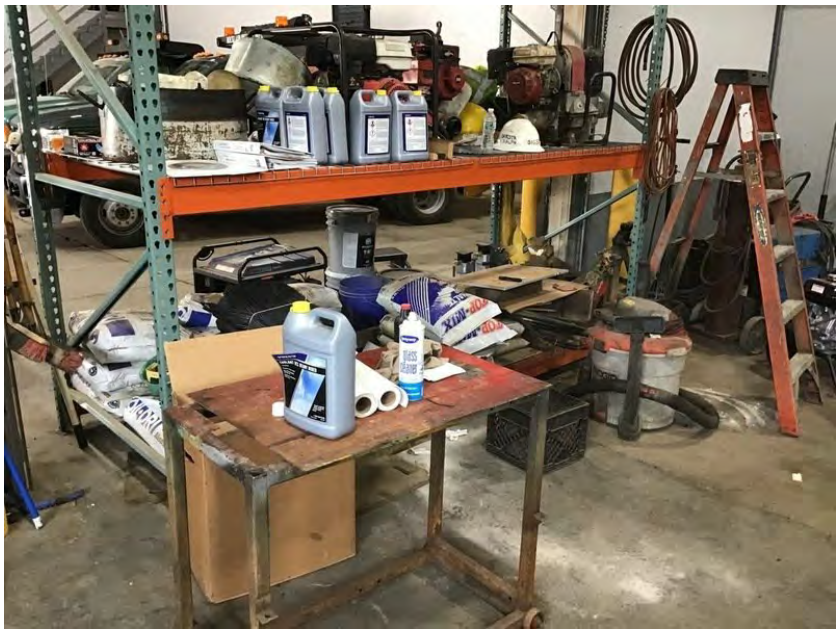
Inspection Information

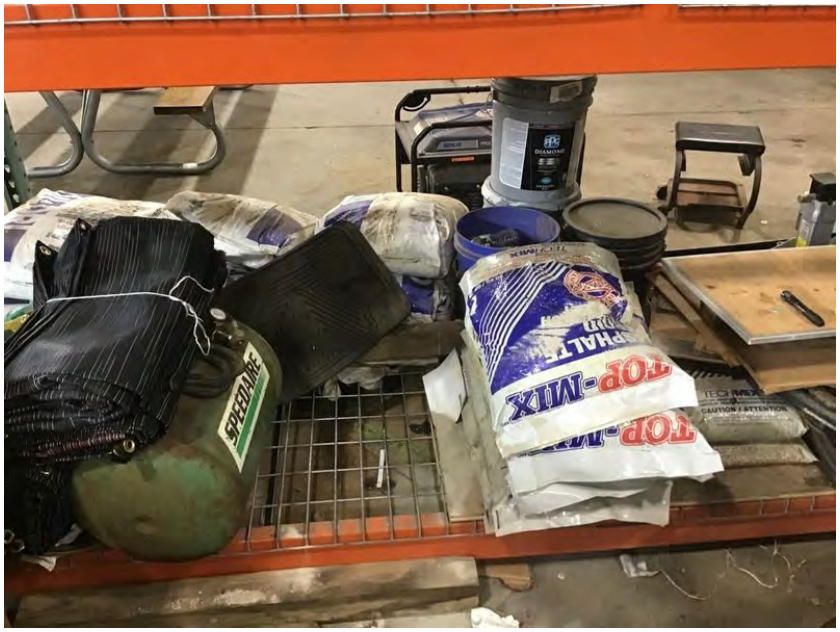
Photos

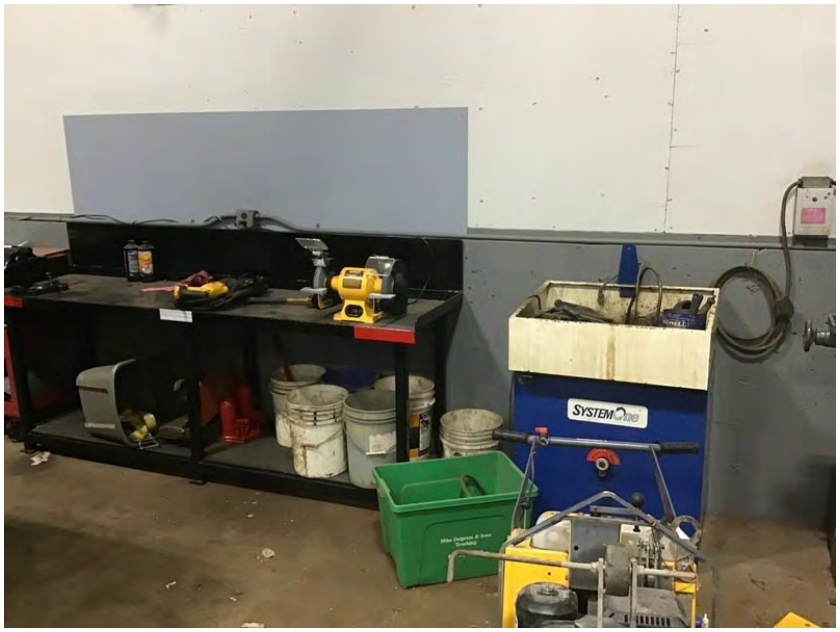
EMERGENCY EYE WASH



HIGHWAY DEPART

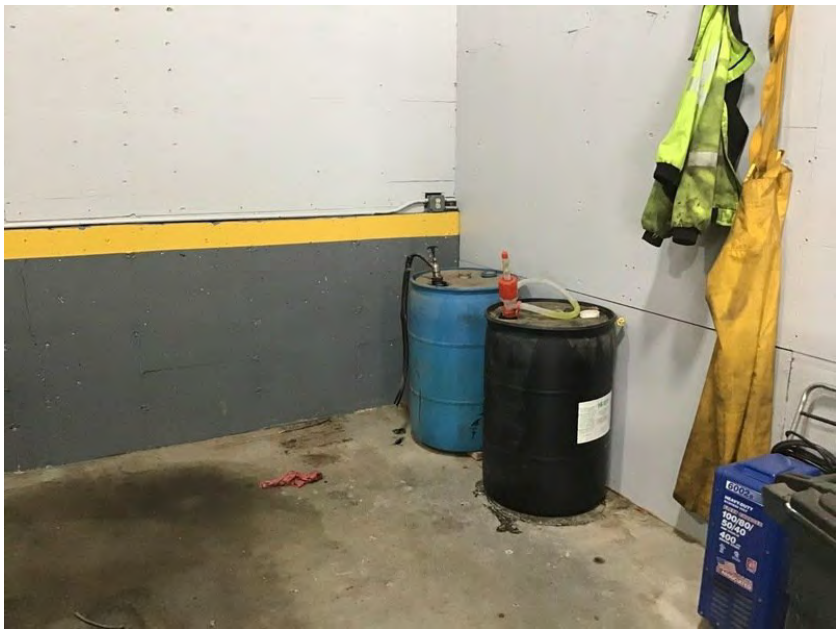


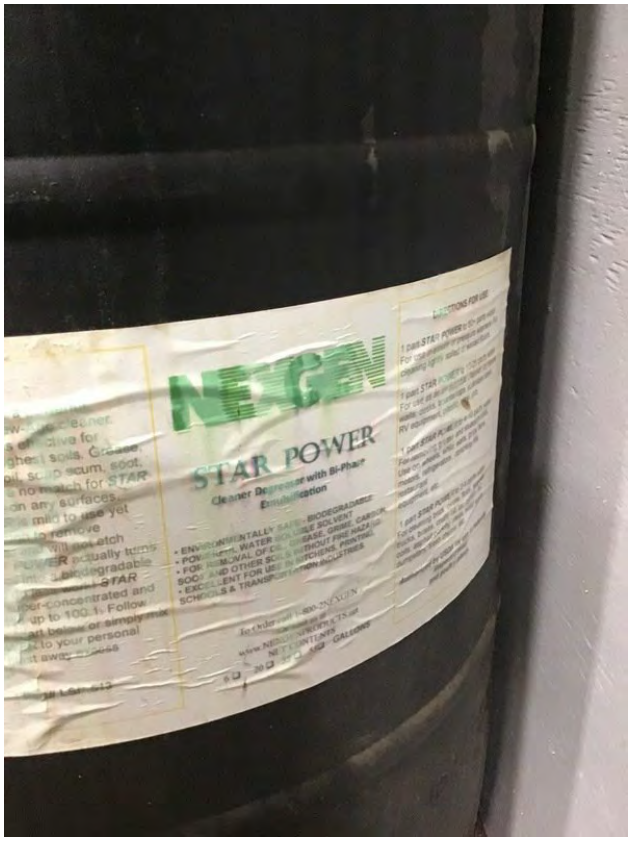

TOP-MIX


SYSTEM

GD
GARDNER DENVER

TOWN OF ROCKLAND
HIGHWAY DEPT.
WASTE OIL




NEIGEN
STAR POWER

DENNIS K. BU

(800)543-5408
MAX.
TARE
NET
CU.CAP.

KOHLER. POWER SYSTEMS

STOP
SPEED
LIMIT
35

JRB
STOP

CAT
TEREX

E.O.M.S.
508-587-9686

ROCKLAND
HIGHWAY
DEPARTMENT

FIRST AID

REZNOR

REZNOR
RA250

E.O.M.S.
508-587-9686

CAUTION
KEEP BACK
150 FT

DOWFLAKE XTRA
CALCIUM CHLORIDE
83-87% PURE
Made from natural brine!
Concrete Accelerator * Dust Suppressant * Snow And Ice
Meets ASTM D98/AASHTO M144 Standards
Concrete Accelerator * Dust Suppressant
Accelerateur Pour Béton
Poussiérant

VOLVO

KEEP ROCKLAND CLEAN
REPUBLIC

DIESEL
NO SMOKING

GASOLINE

CAUTION
KEEP BACK
50 FT

DownEaster

DANGER

School, Jefferson Elementary School

Created	2020-08-31 15:04:10 UTC by EPField 01
Updated	2020-09-01 14:35:52 UTC by EPField 01
Location	42.1240883879756, -70.9112108778869

General

Client	Town of Rockland
Date	2020-08-31
Time	11:04
Address	34 James St Rockland, MA 02370
Facility Type	School
Facility Name	Jefferson Elementary School

Inspection Information

Photos

Library

Created	2020-08-19 15:39:17 UTC by EPField 01
Updated	2020-08-19 15:41:37 UTC by EPField 01
Location	42.1321236953802, -70.9168251603842

General

Client	Town of Rockland
Date	2020-08-19
Time	11:39
Address	20 Belmont St Rockland, MA 02370
Facility Type	Library

Inspection Information

Photos

School, Memorial Park Elementary School

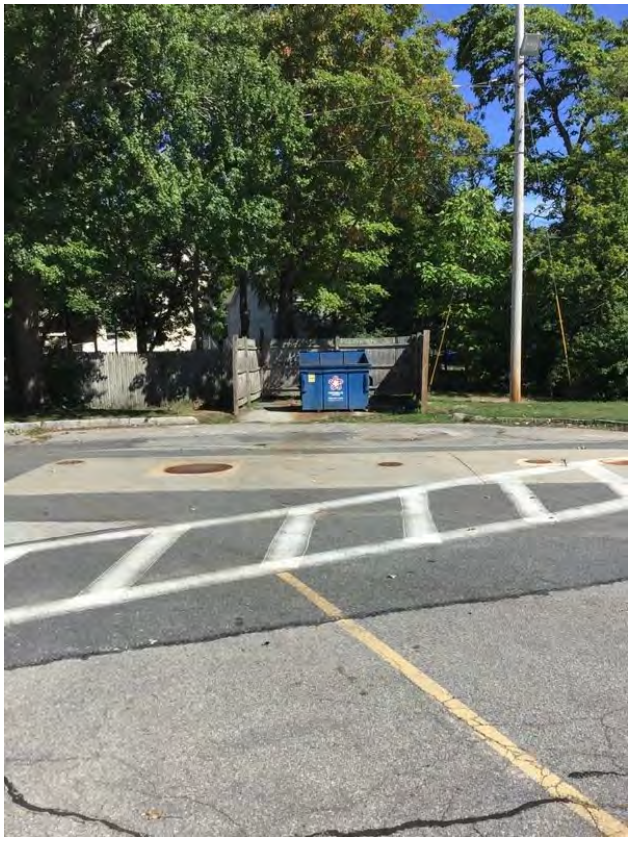
Created	2020-08-31 14:48:31 UTC by EPField 01
Updated	2020-09-01 14:33:01 UTC by EPField 01
Location	42.1277489327287, -70.9224738926356

General

Client	Town of Rockland
Date	2020-08-31
Time	10:48
Address	1 Lt Col Brian Duffy Way Rockland, MA 02370
Facility Type	School
Facility Name	Memorial Park Elementary School

Inspection Information

Photos



Police Station, Rockland Police Department

Created	2020-08-31 16:43:03 UTC by EPField 01
Updated	2020-09-01 14:34:23 UTC by EPField 01
Location	42.1245406940566, -70.90197712183

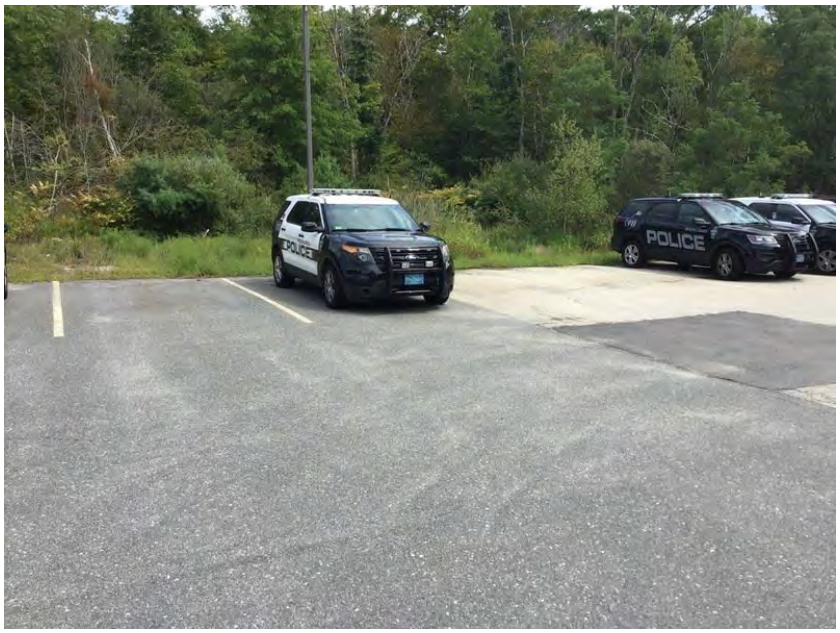
General

Client	Town of Rockland
Date	2020-08-31
Time	12:43
Address	490 Market St Rockland, MA 02370
Facility Type	Police Station
Facility Name	Rockland Police Department

Inspection Information

Photos

6yd
REPUBLIC
800-925-3260


POLICE
POLICE

Senior Center

Created	2020-08-19 15:48:26 UTC by EPField 01
Updated	2020-08-19 15:58:53 UTC by EPField 01
Location	42.1265016791708, -70.9247326478362

General

Client	Town of Rockland
Date	2020-08-19
Time	11:48
Address	317 Plain St Rockland, MA 02370
Facility Type	Senior Center

Inspection Information

Photos

Sewer Department, Rockland Sewer Department

Created	2020-08-31 15:37:03 UTC by EPField 01
Updated	2020-09-01 14:40:45 UTC by EPField 01
Location	42.1073049260696, -70.8992677555148

General

Client	Town of Rockland
Date	2020-08-31
Time	11:37
Address	587 Summer St Rockland, MA 02370
Facility Type	Sewer Department
Facility Name	Rockland Sewer Department

Inspection Information

Photos

Town Hall

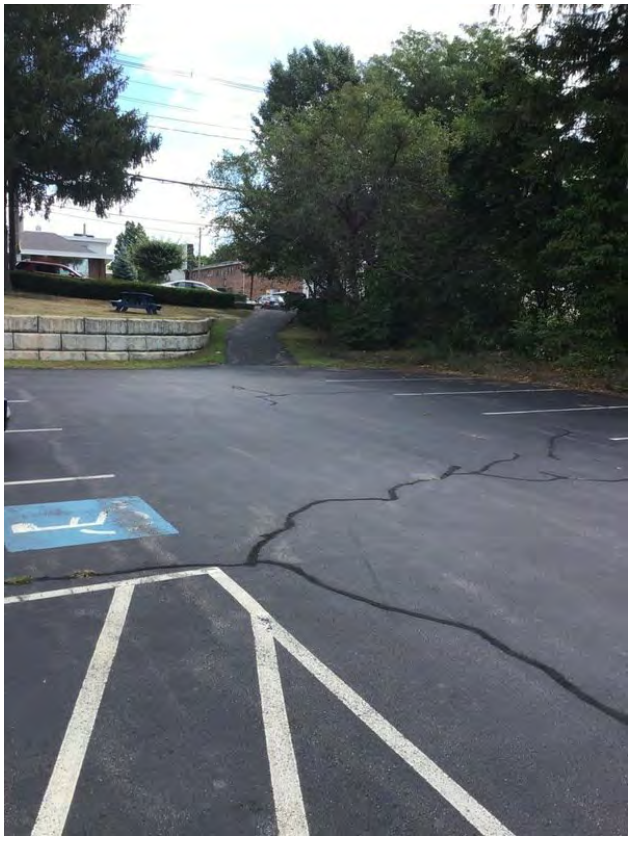
Created	2020-08-19 14:59:46 UTC by EPField 01
Updated	2020-08-19 15:23:41 UTC by EPField 01
Location	42.1287423399489, -70.9156952798367

General

Client	Town of Rockland
Date	2020-08-19
Time	10:59
Address	242 Union St Rockland, MA 02370
Facility Type	Town Hall

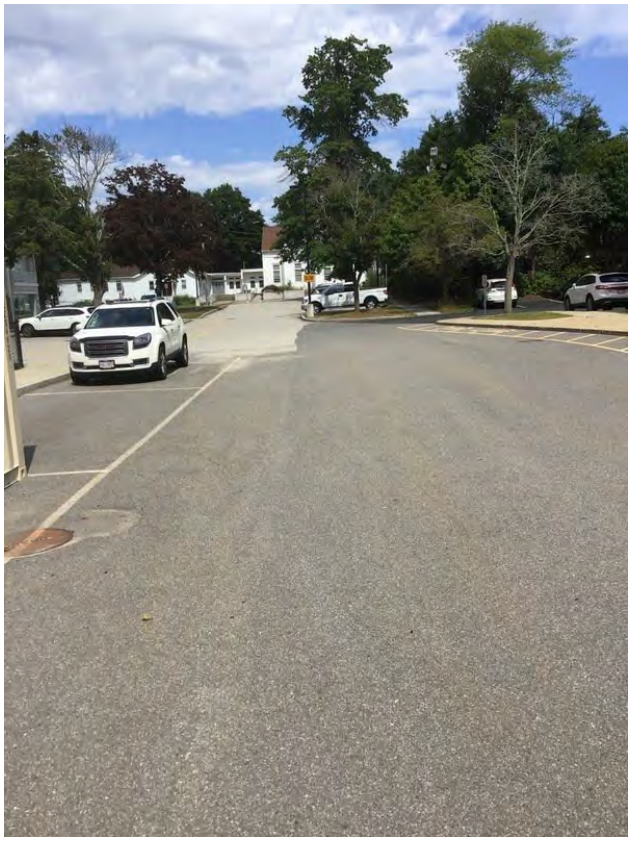
Inspection Information

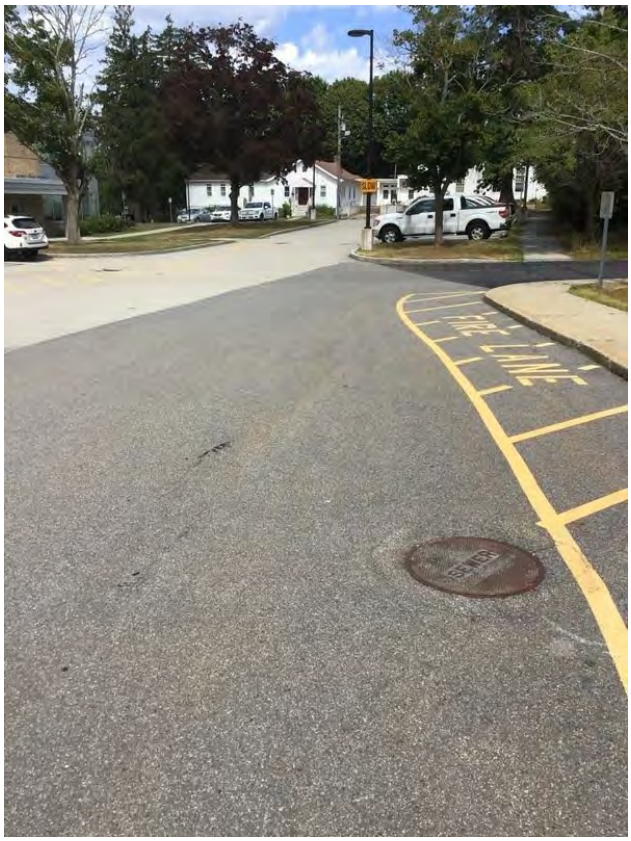
Photos

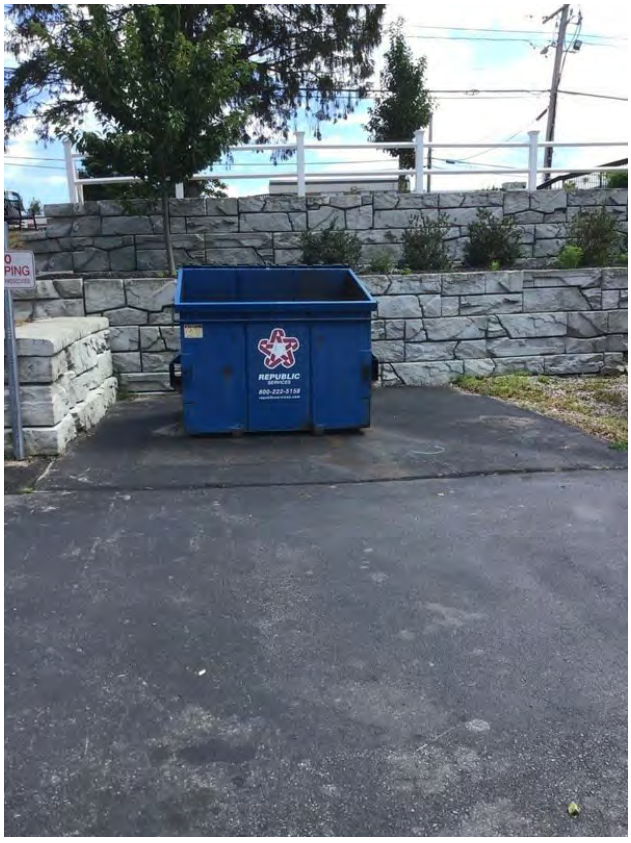


mobile mini

FIRE LANE




FIRE LANE


REPUBLIC

Transfer Station , Town of Rockland Recycle Center

Created	2020-08-31 16:59:41 UTC by EPField 01
Updated	2020-09-01 14:43:15 UTC by EPField 01
Location	42.0876258938034, -70.894014062426

General

Client	Town of Rockland
Date	2020-08-31
Time	12:59
Address	1000 Beech St Rockland, MA 02341
Facility Type	Transfer Station
Facility Name	Town of Rockland Recycle Center

Inspection Information

Photos

DANGER
USED
OIL
HAZARDOUS WASTE
TOXIC WASTE OIL

LEAVES
ONLY

Abington & Rockland Joint Water Department, Water Department

Created	2020-08-31 17:28:12 UTC by EPField 01
Updated	2020-09-01 14:37:30 UTC by EPField 01
Location	42.1122785606247, -70.927155688405

General

Client	Town of Rockland
Date	2020-08-31
Time	13:28
Address	366 Centre Ave Rockland, MA 02370
Facility Type	Abington & Rockland Joint Water Department
Facility Name	Water Department

Inspection Information

Photos

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.

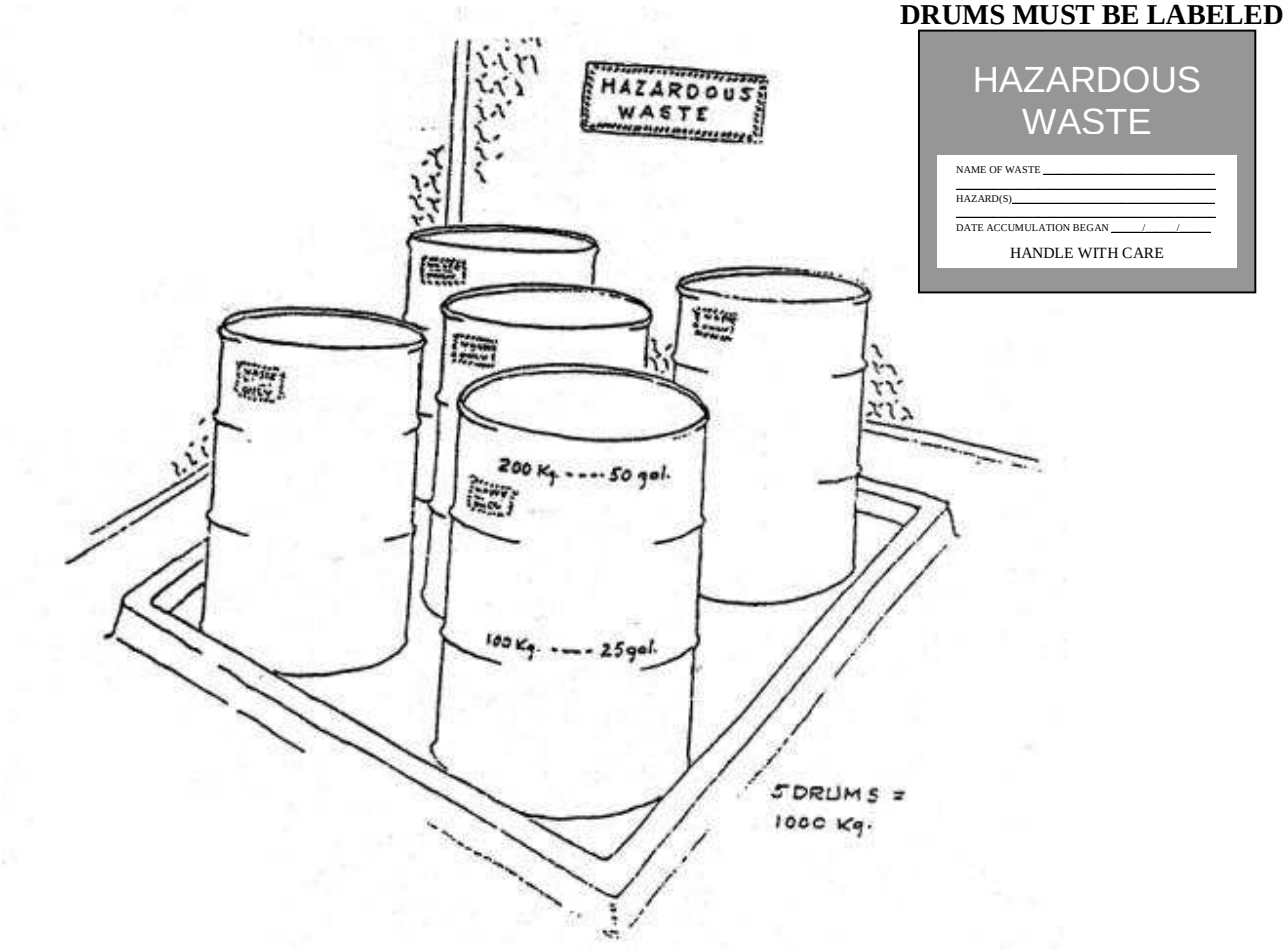
VSQG • Separate containers of incompatible wastes by a berm, dike, or similar structure.

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.

and

- 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 G

Stormwater Infrastructure Map

N

HINGHAM

NORWELL

WEYMOUTH

HANOVER

ABINGTON

ROCKLAND

WHITMAN

HANSON

Drain Pipes

MS4 Outfall

Upland Outfall

Inlet

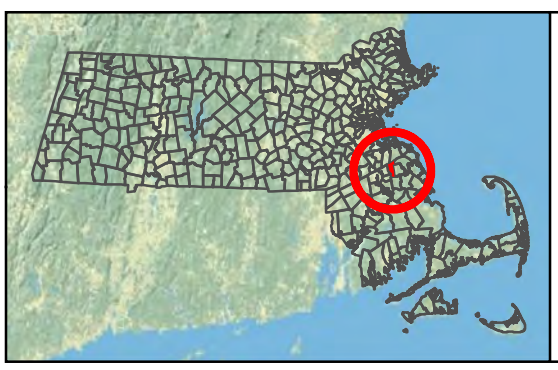
Outlet

Manhole

Catch Basin

Miles

0 0.5 1



TOWN OF ROCKLAND INC. A.D. 1874 MASS. HATHERLY GRANT 1656 ABINGTON 1712

Appendix G. Stormwater Infrastructure Map
Rockland, Massachusetts
June 2020

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Appendices\AppG - Stormwater Infrastructure Map.mxd

APPENDIX H

Street and Parking Lot Sweeping Log

ENVIRONMENTAL PARTNERS

Street Sweeping Log

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

Weather Today: _____ Temperature:_____

Supervisor/Crew Leader: _____

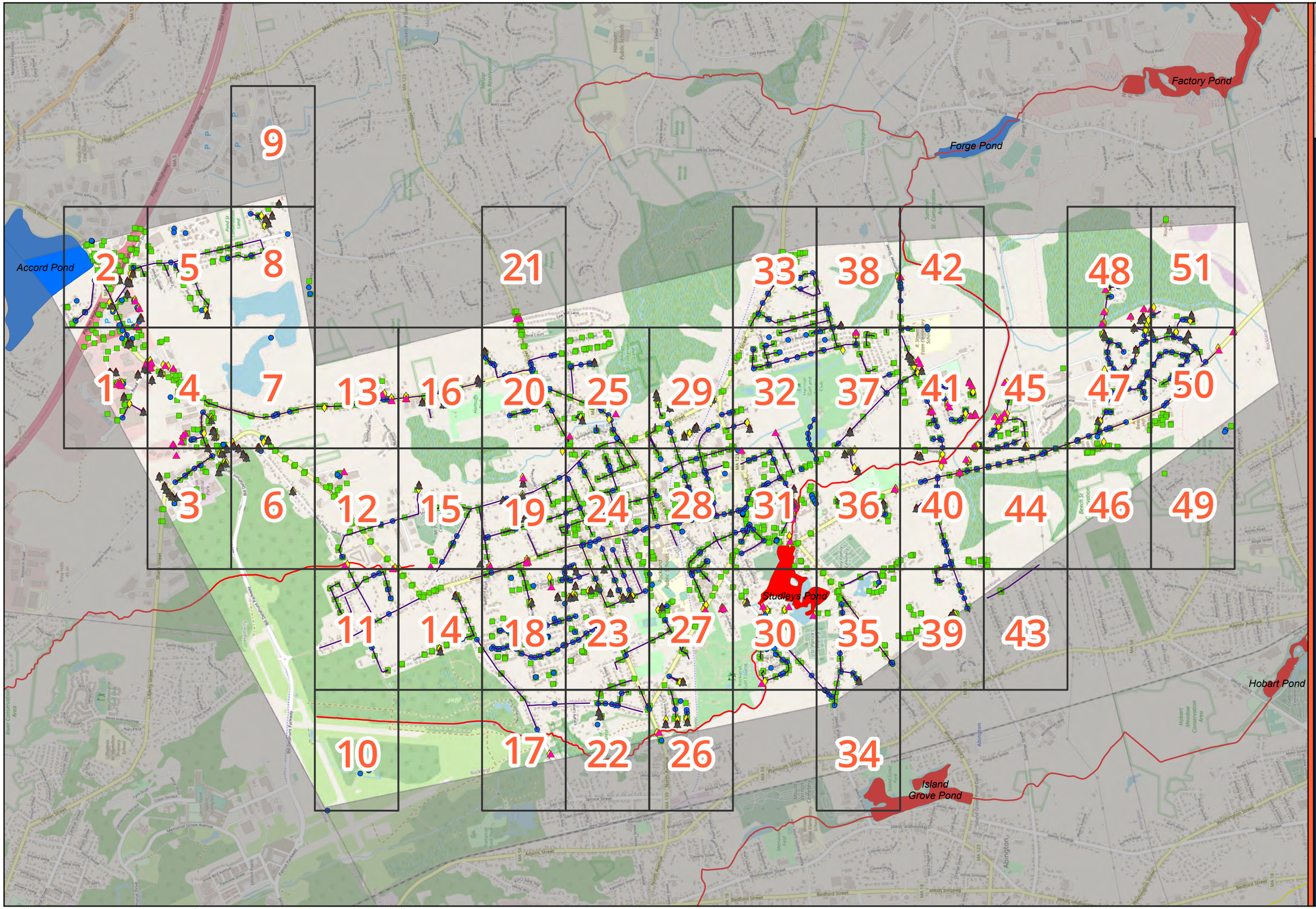
Street Swept (Name)	Miles	Potential Sources of Pollution	Comments
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____ Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	
		____None ____Material Storage ____Construction Activity ____Equipment Storage ____Erosion ____Other	

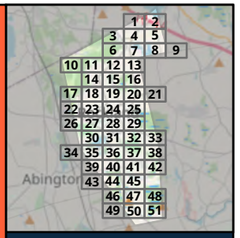
Total Sediment Accumulated from Route (estimated based on truck loads)_____cubic yards

Total Sediment Accumulated from Route (if weighed) _____tons

ATTACHMENT 1

Town of Rockland Mapbook





Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

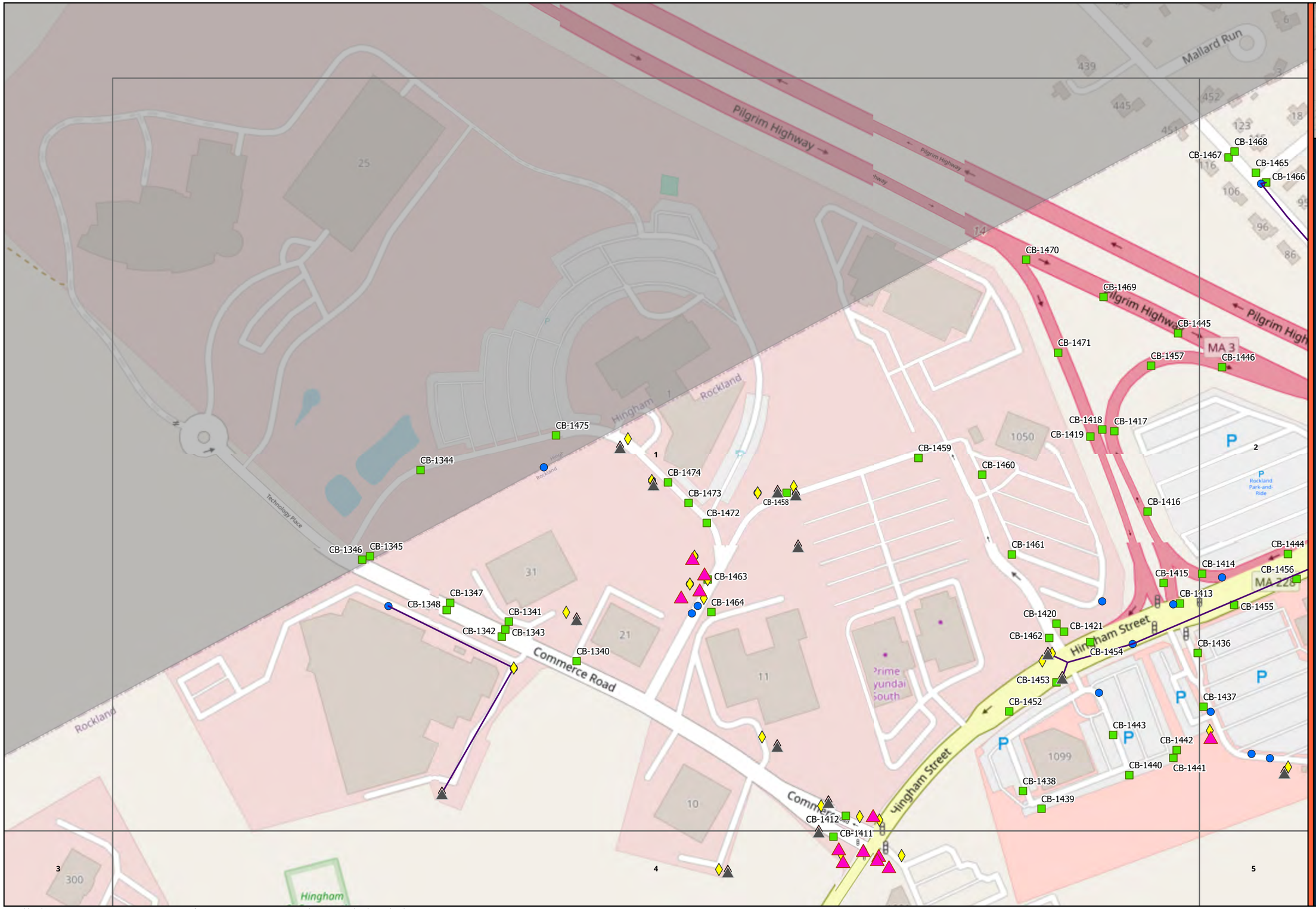
N

0 1,000 2,000 Feet

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:21 PM



Page Number: 1

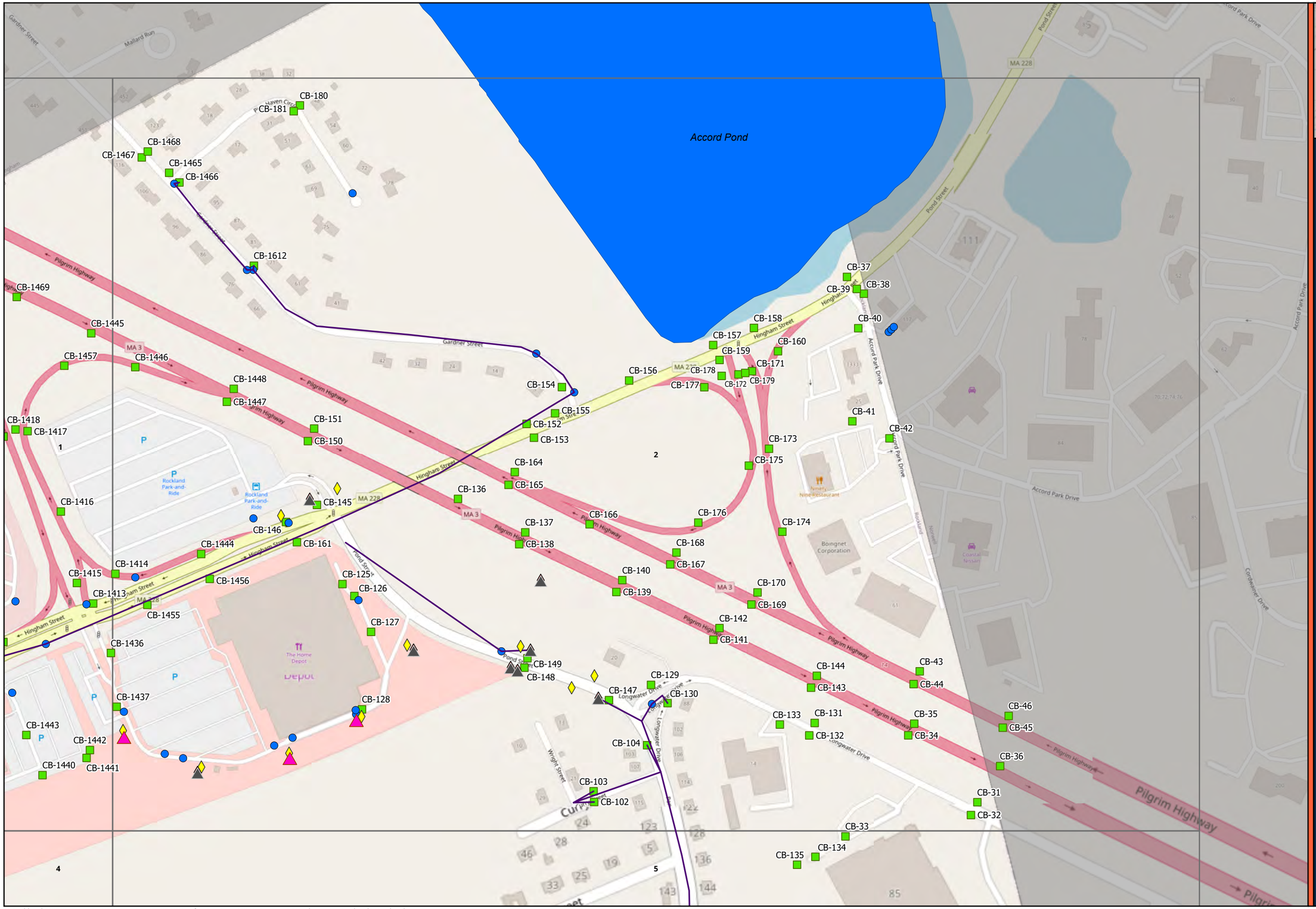
Stormwater System

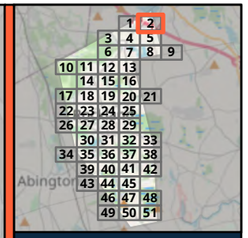
Rockland, Massachusetts

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:22 PM





Page Number: 2

Stormwater System

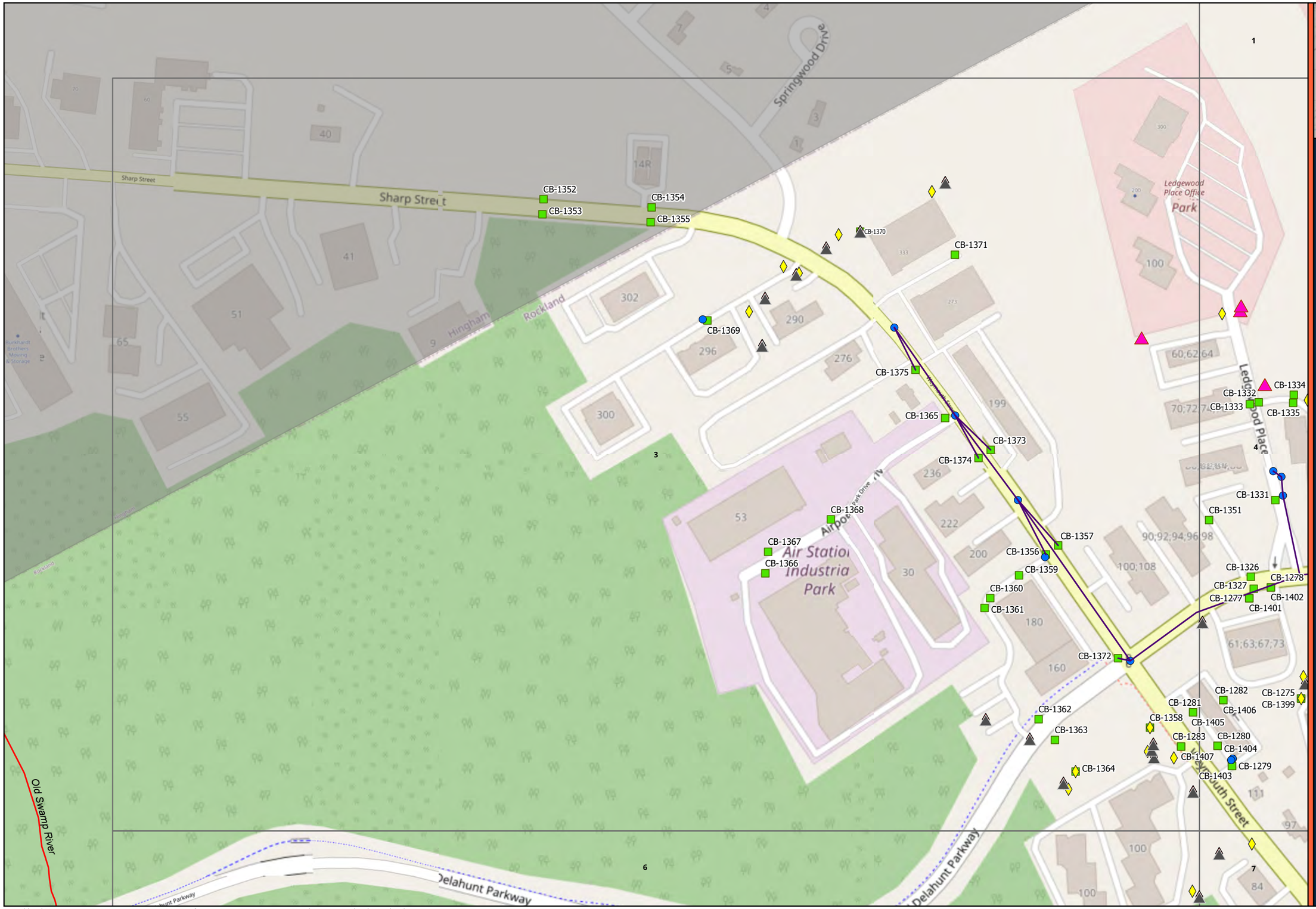
Rockland, Massachusetts

MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS



Stormwater System

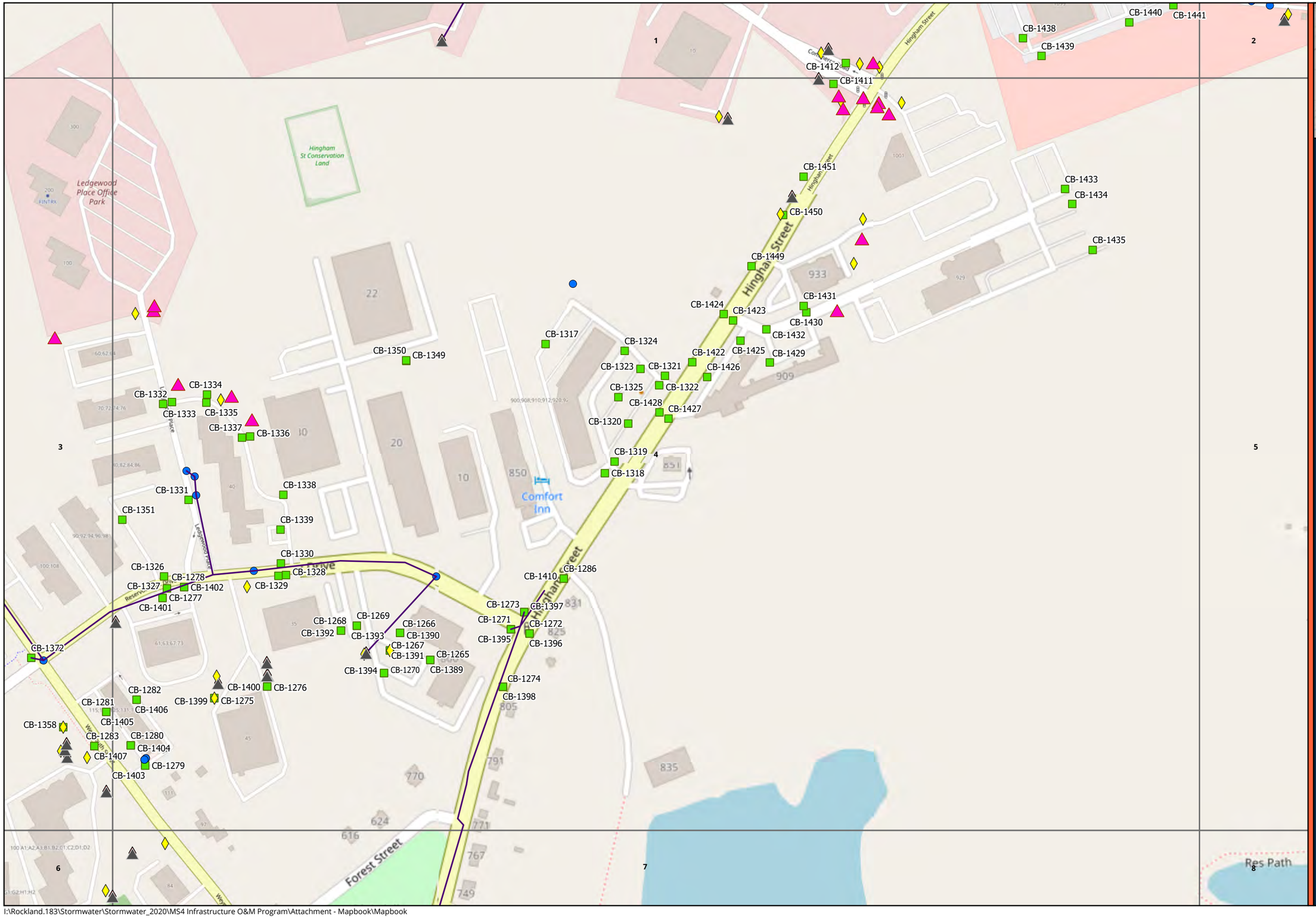
Rockland, Massachusetts

MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS



Stormwater System

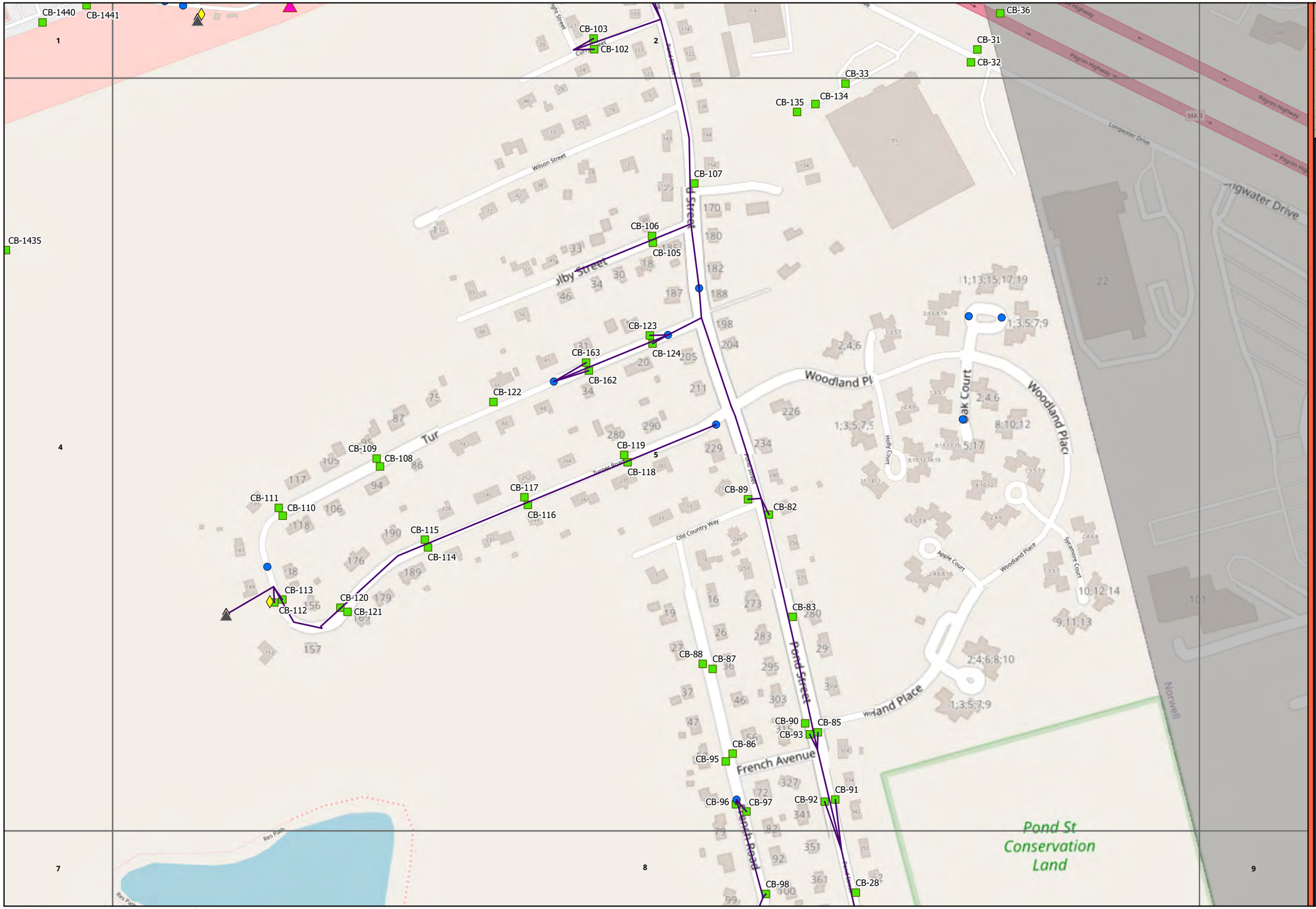
Rockland, Massachusetts

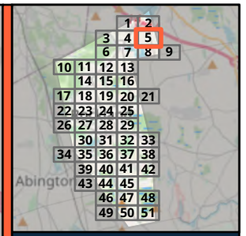
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Stormwater System

Rockland, Massachusetts

MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS

Stormwater System

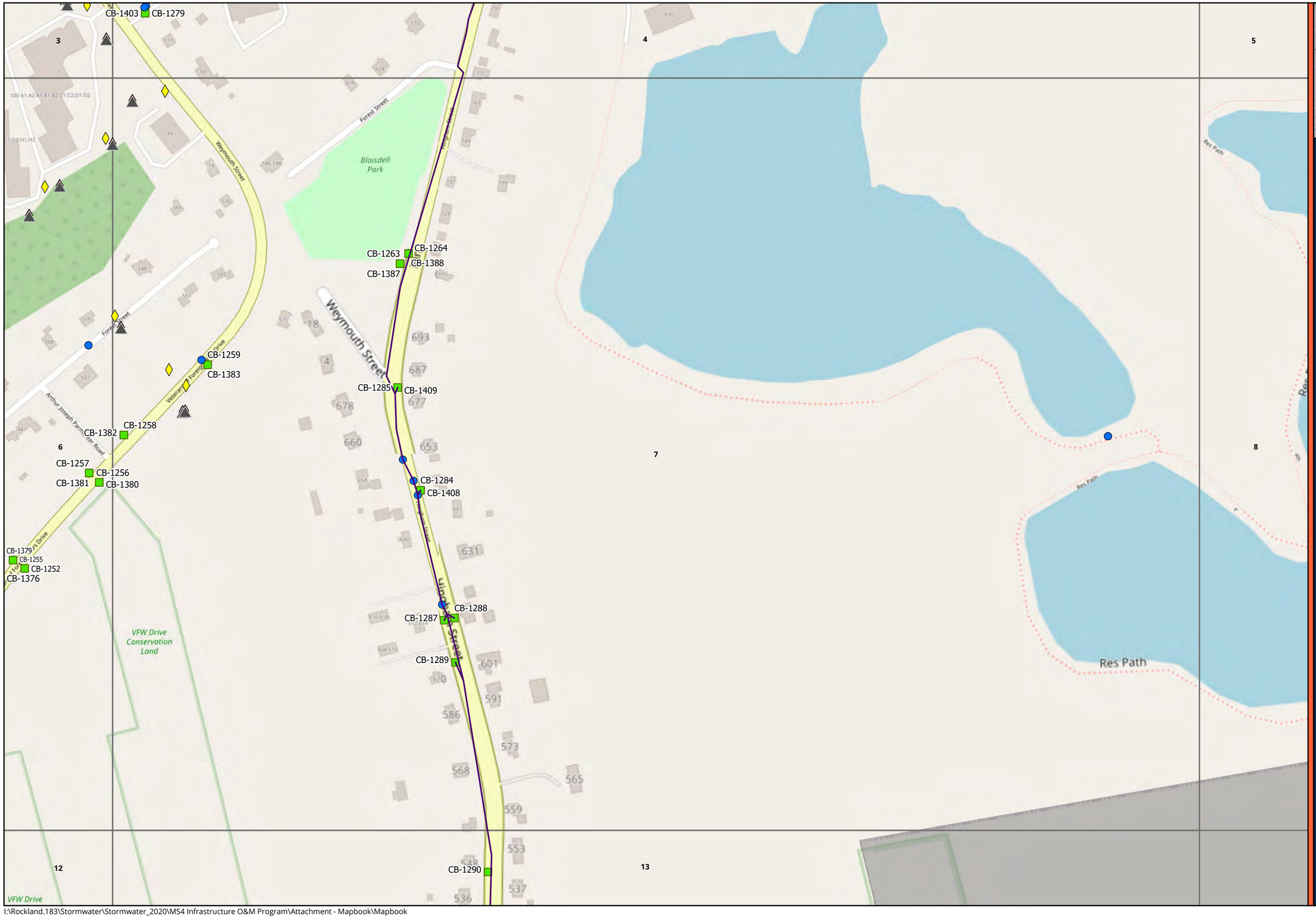
Rockland, Massachusetts

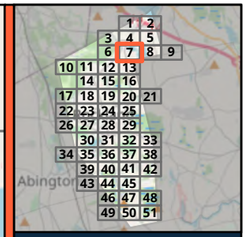
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 7

Stormwater System

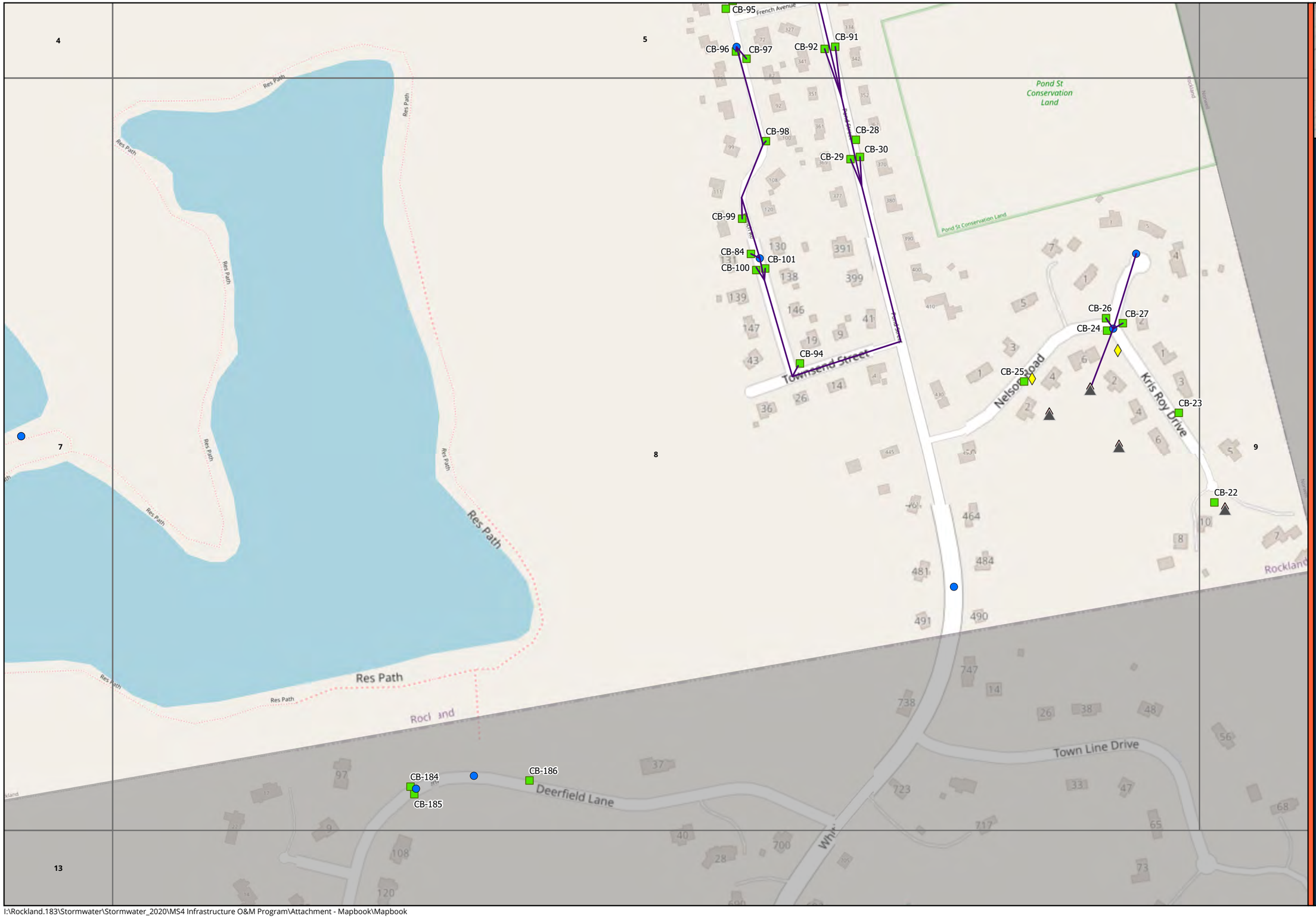
Rockland, Massachusetts

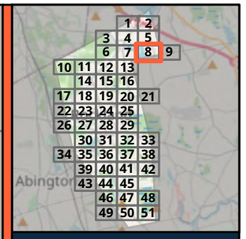
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 8

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

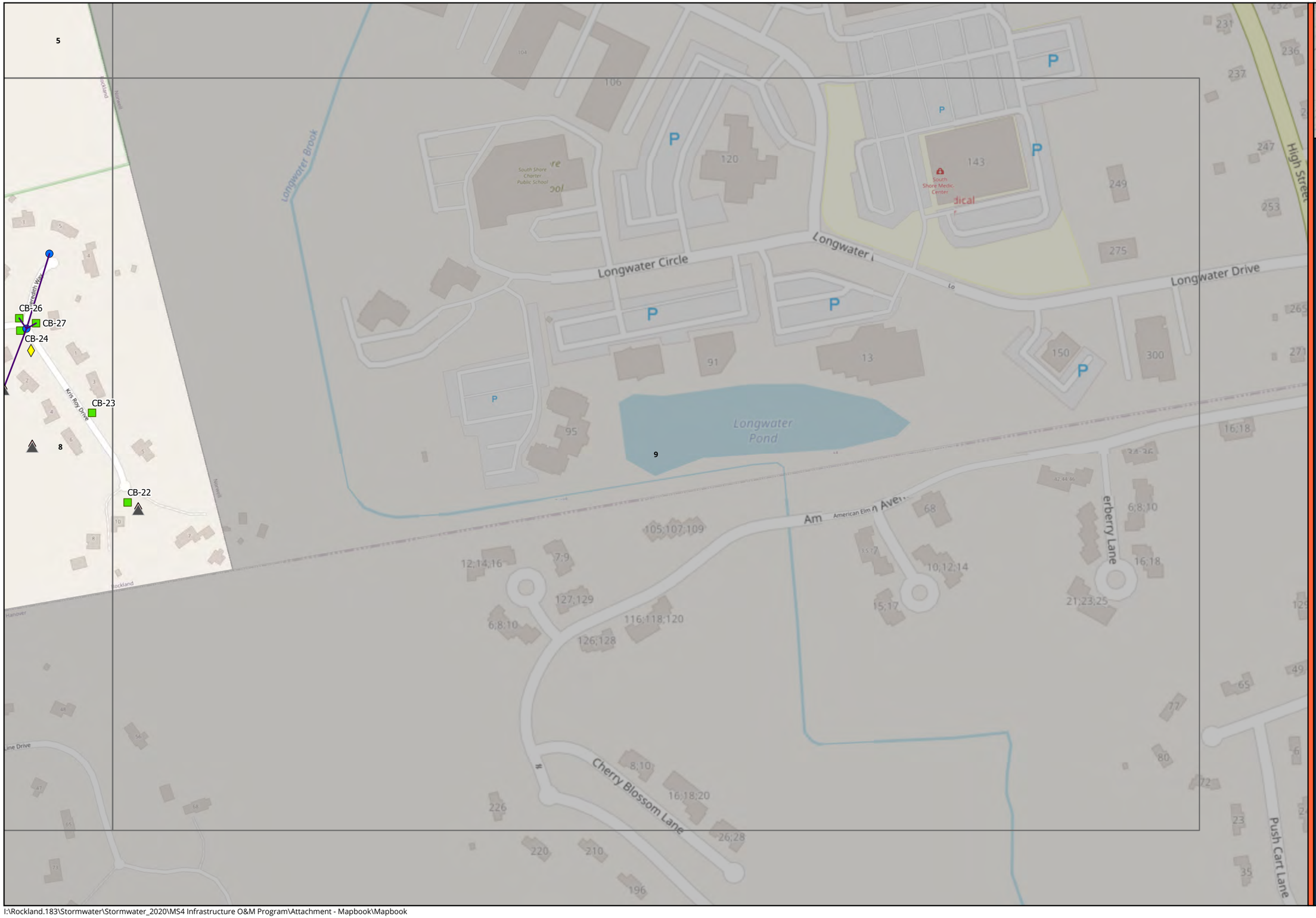
N

0 125 250 Feet

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:22 PM



Stormwater System

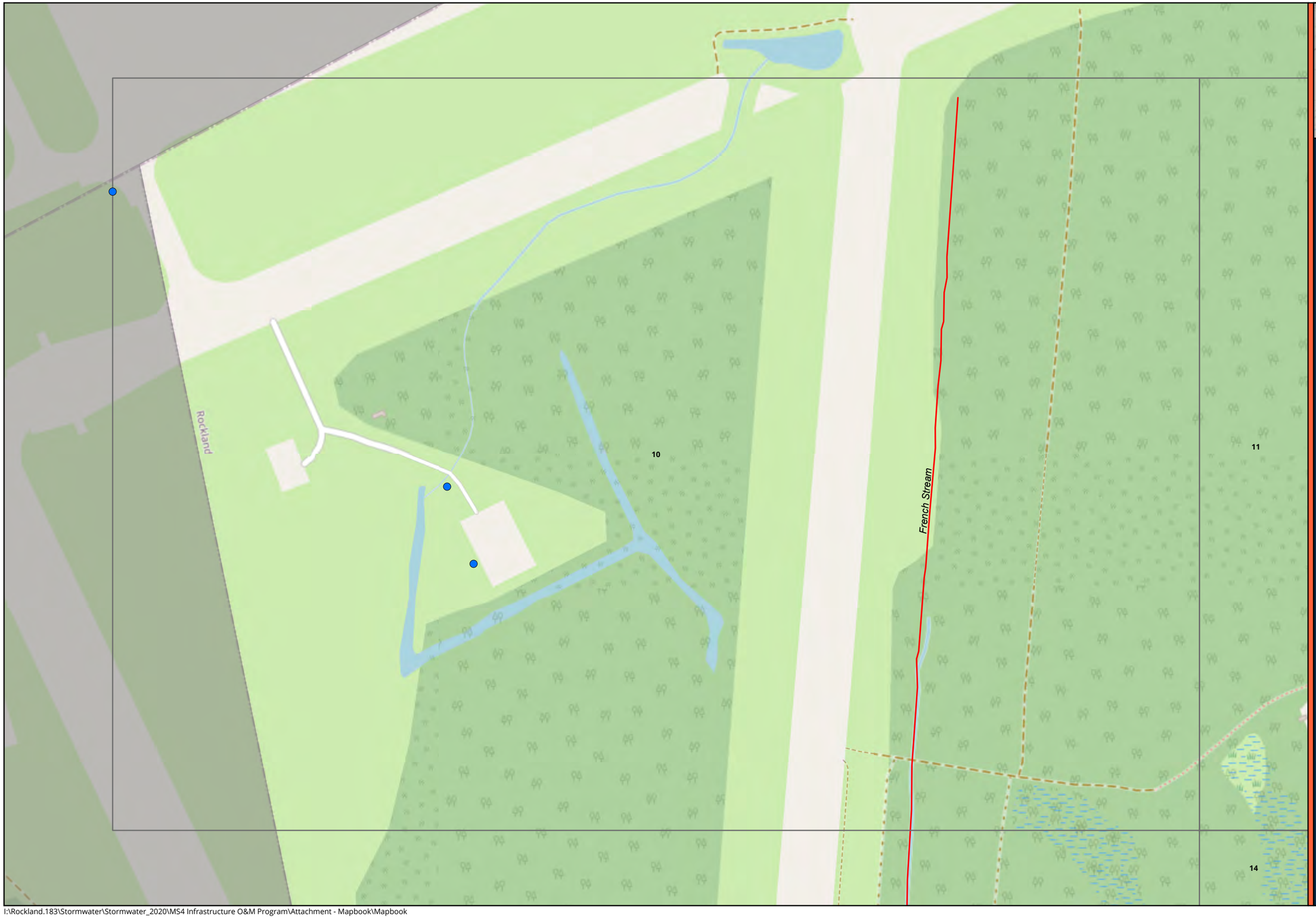
Rockland, Massachusetts

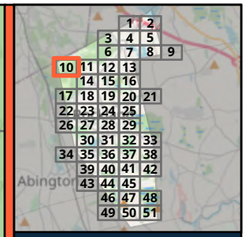
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 10

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS

Stormwater System

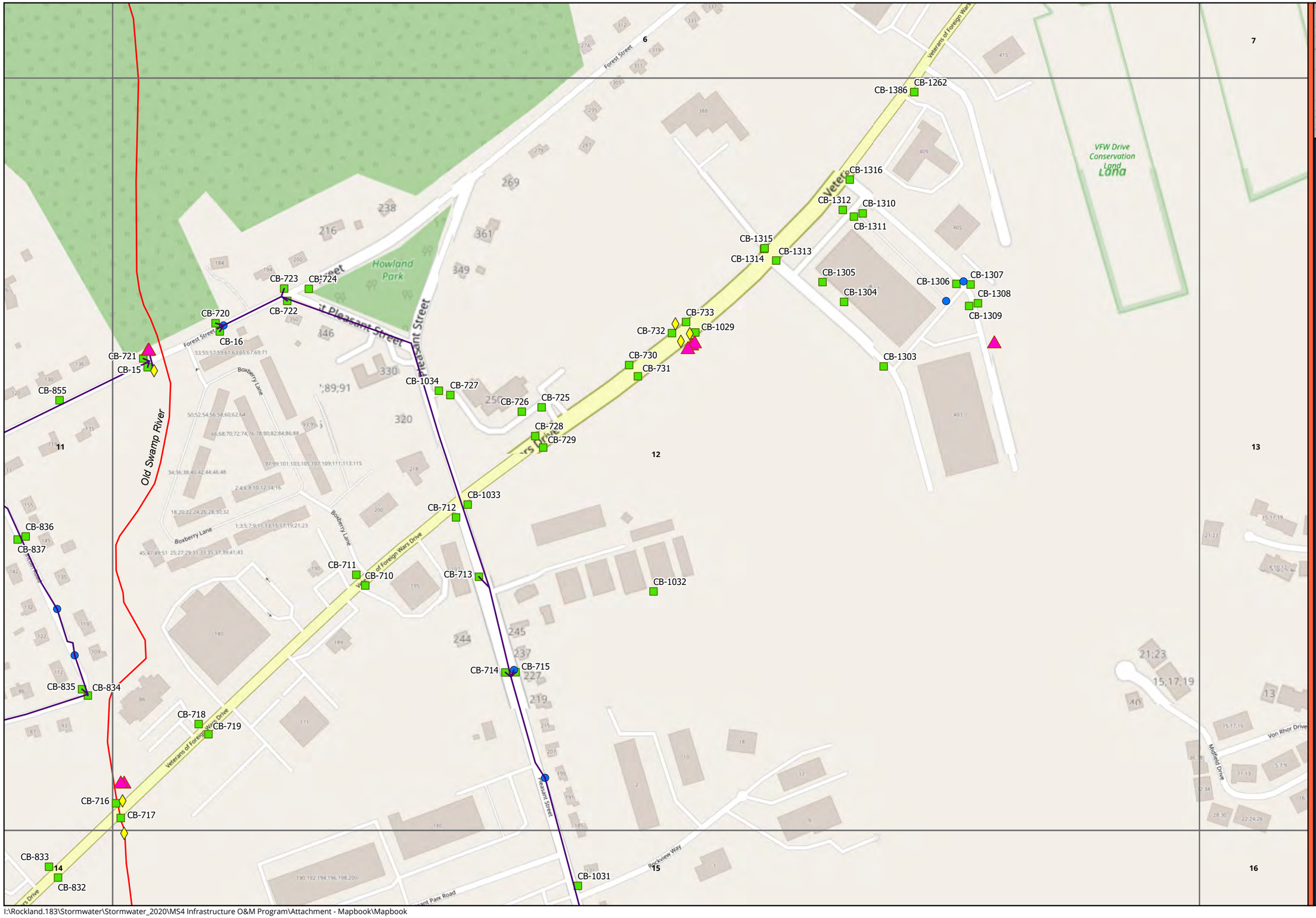
Rockland, Massachusetts

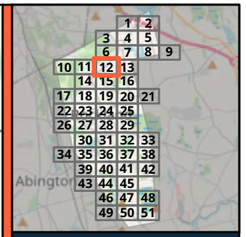
MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS





Page Number: 12

Stormwater System

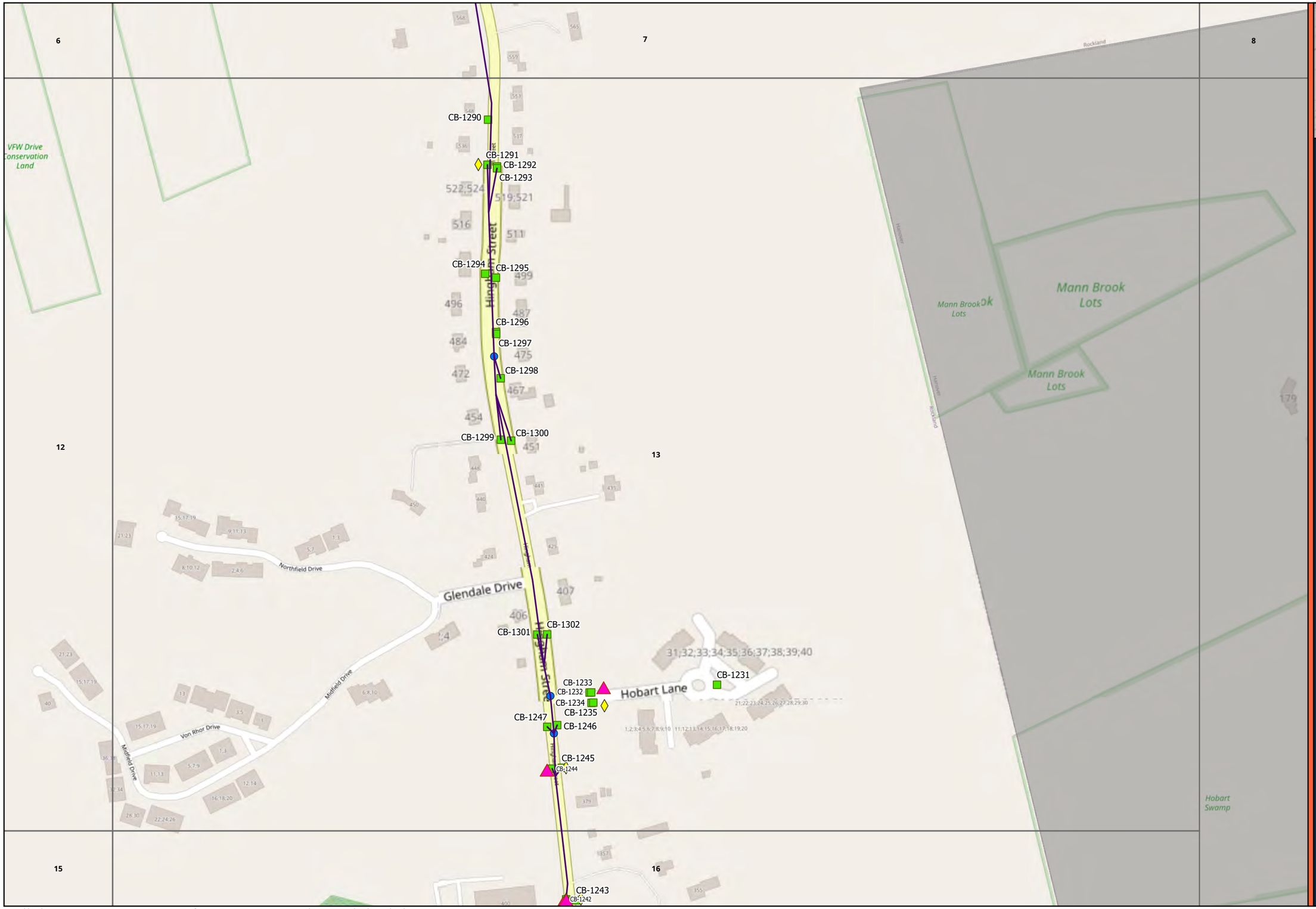
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

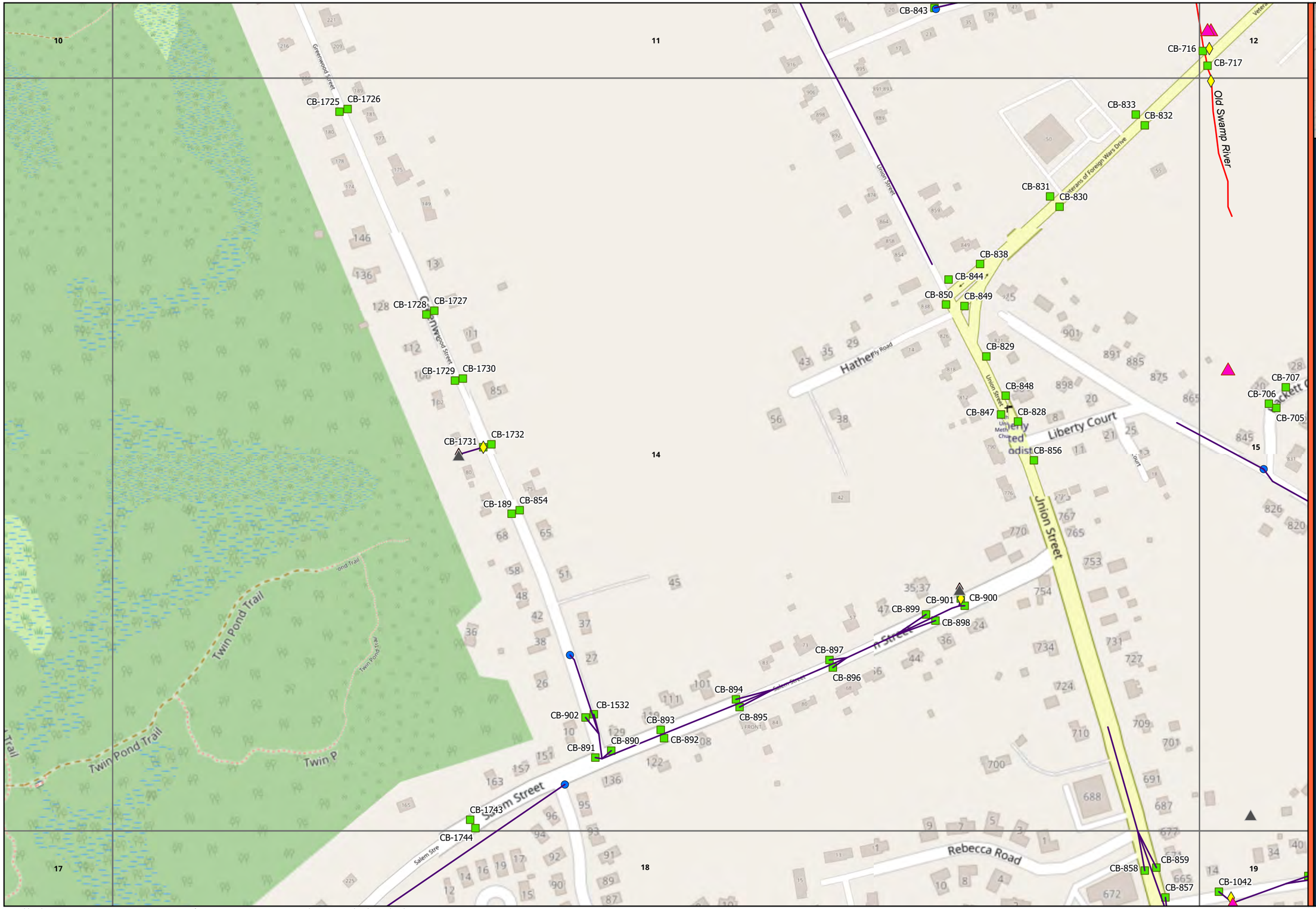
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

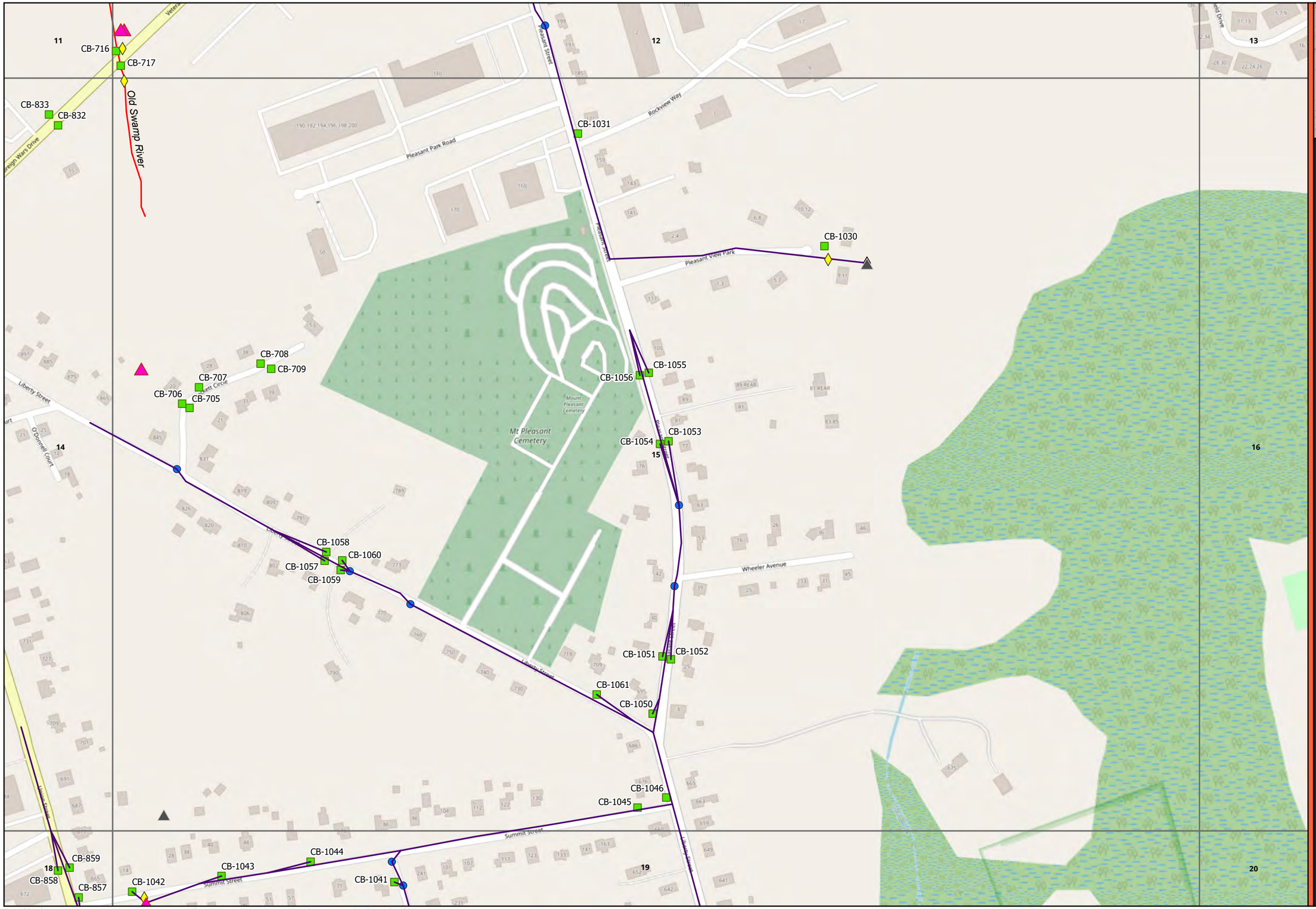
Rockland, Massachusetts

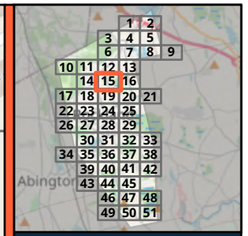
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 15

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

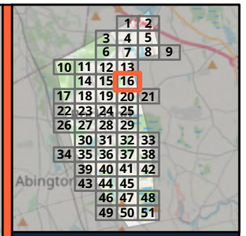
N

0 125 250 Feet

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:22 PM



Stormwater System

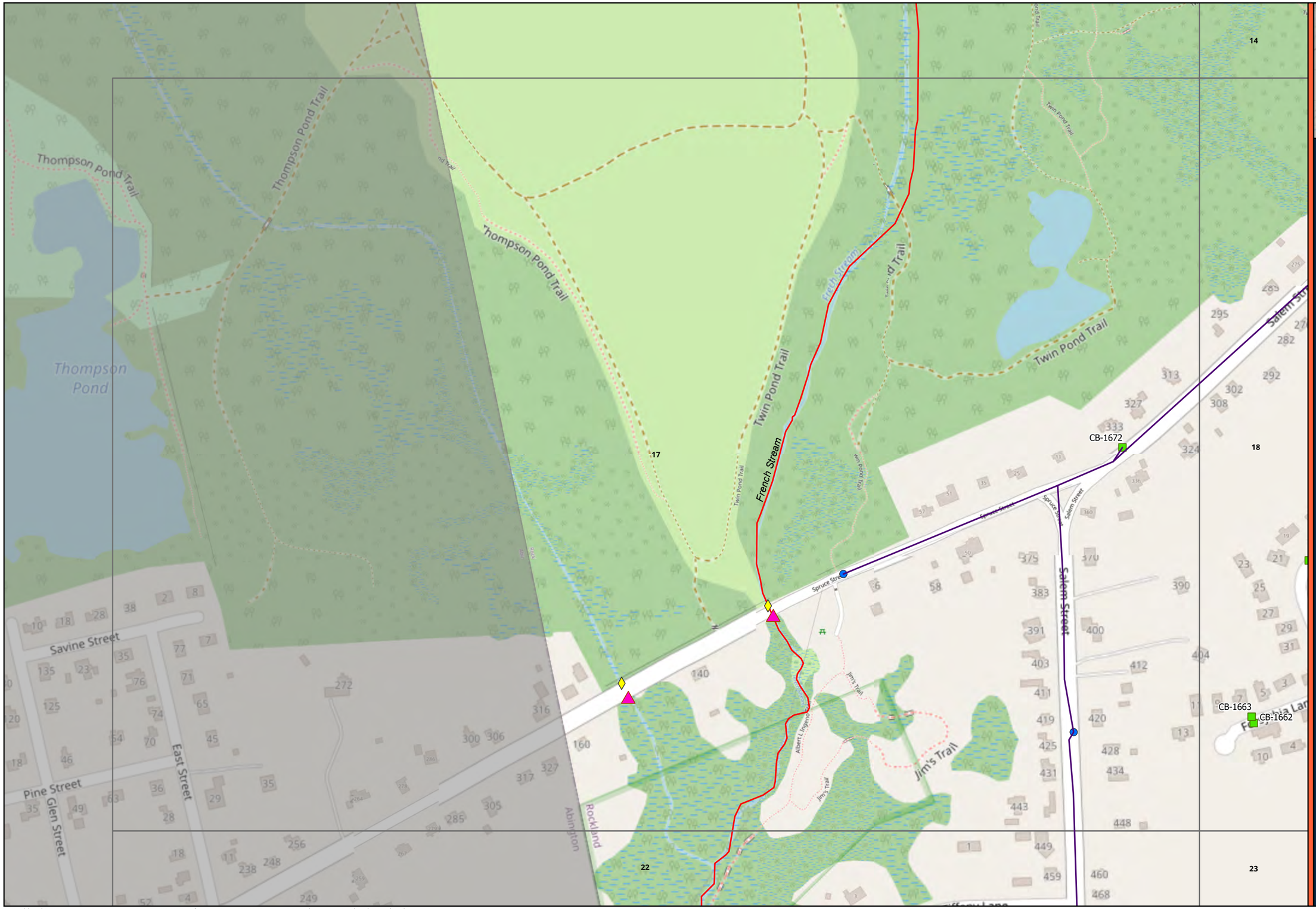
Rockland, Massachusetts

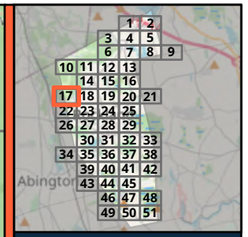
MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS





Page Number: 17

Stormwater System

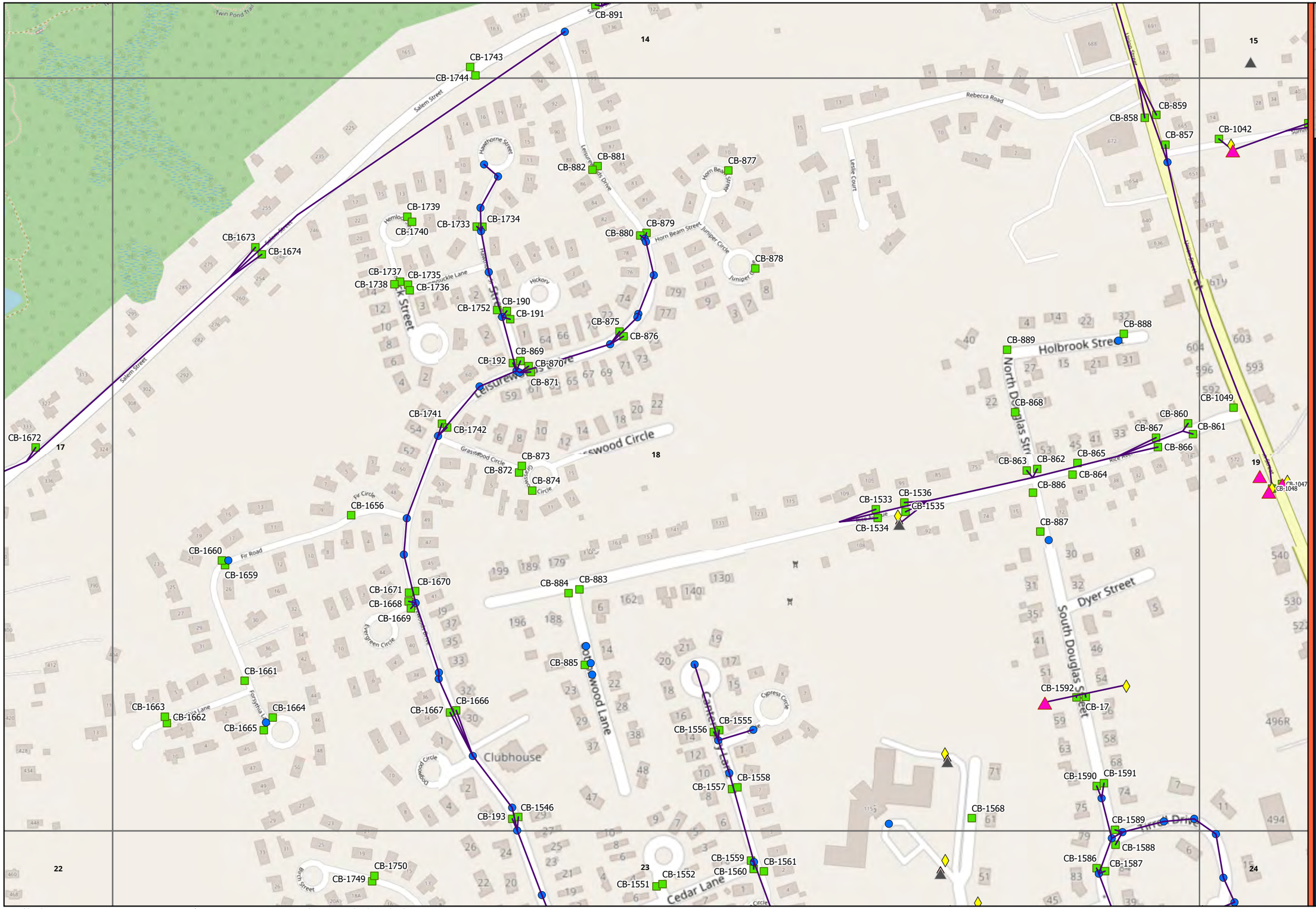
Rockland, Massachusetts

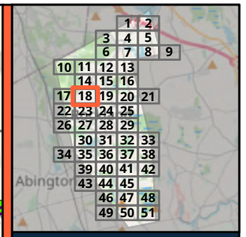
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS





Page Number: 18

Stormwater System

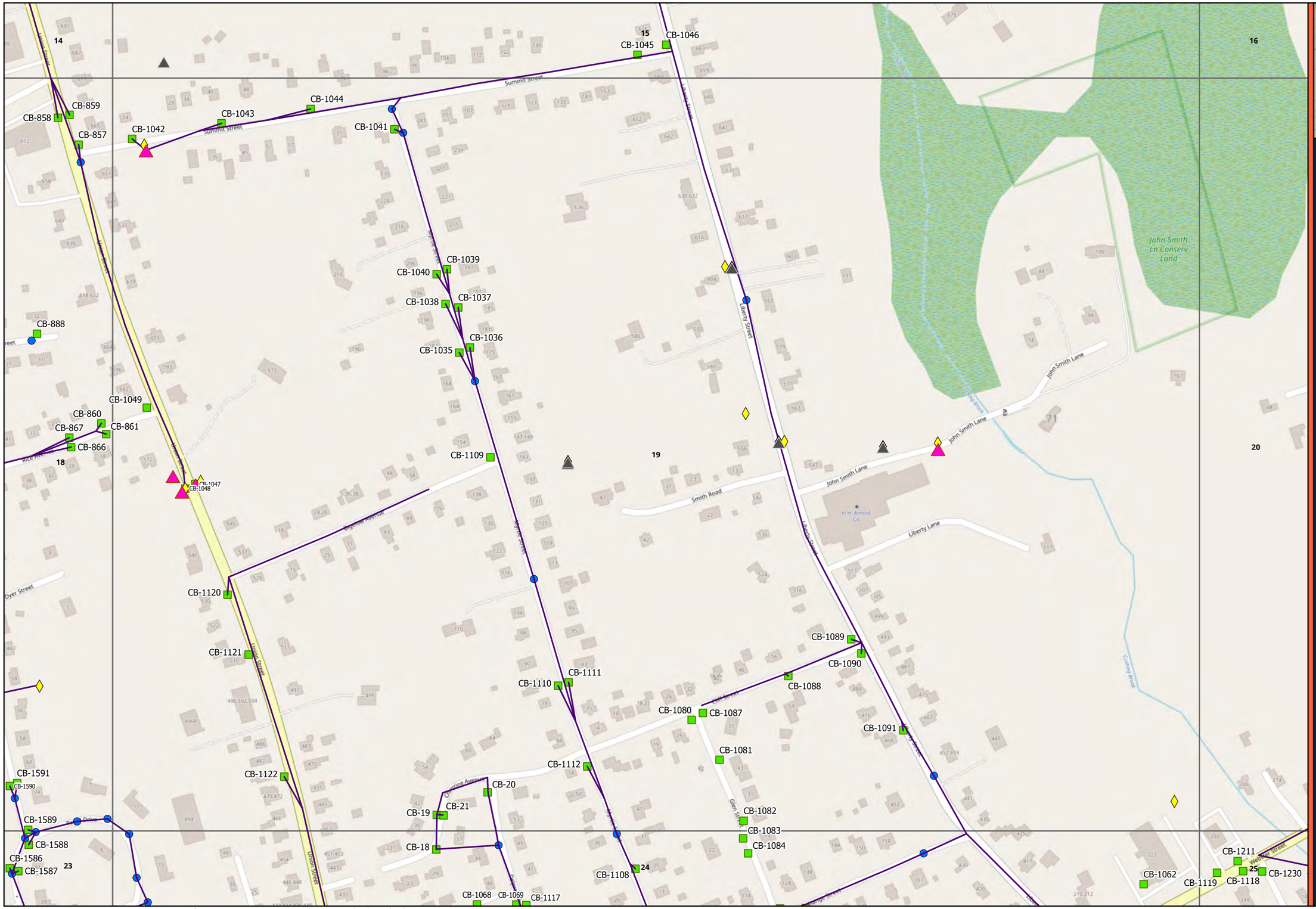
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

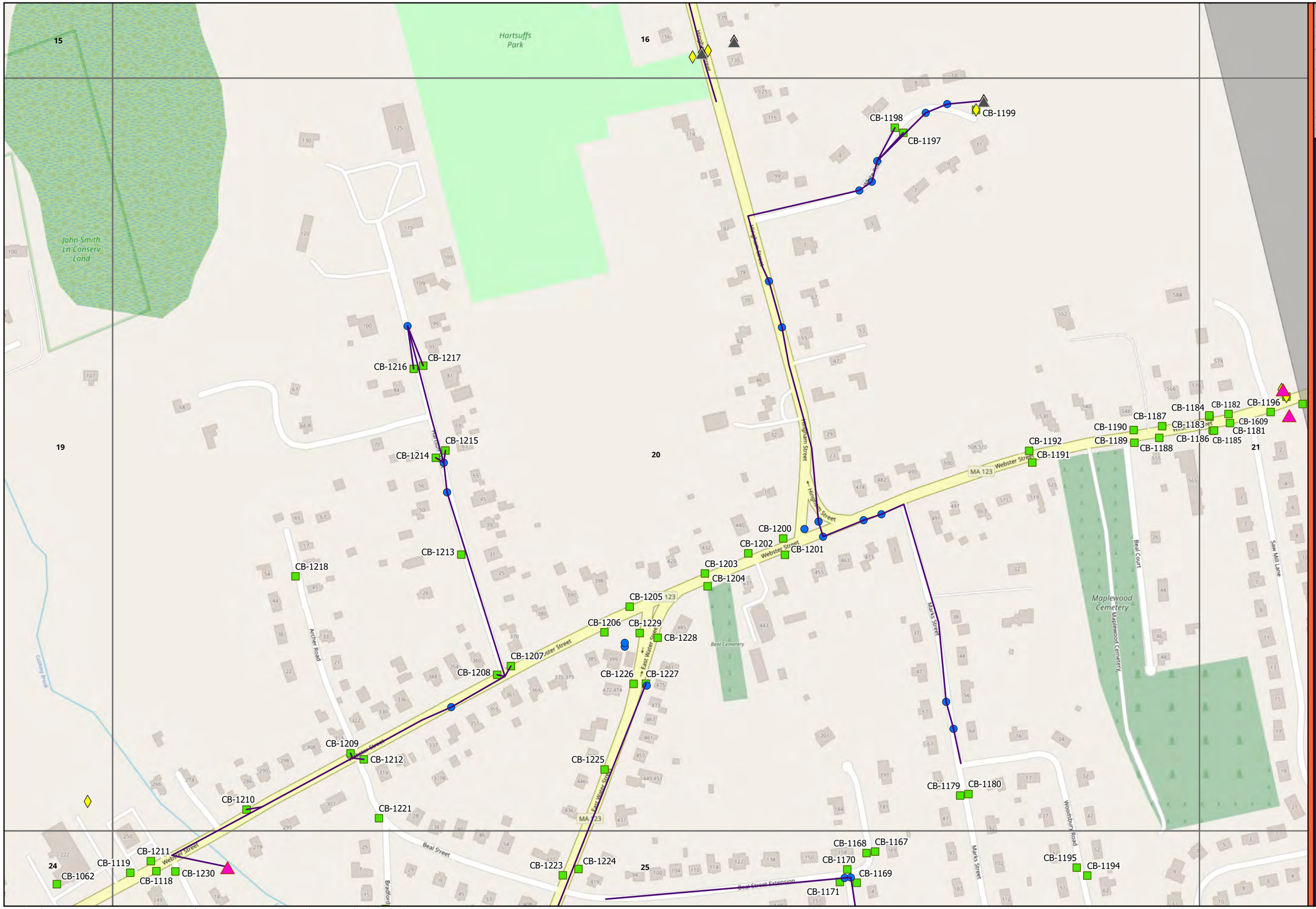
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

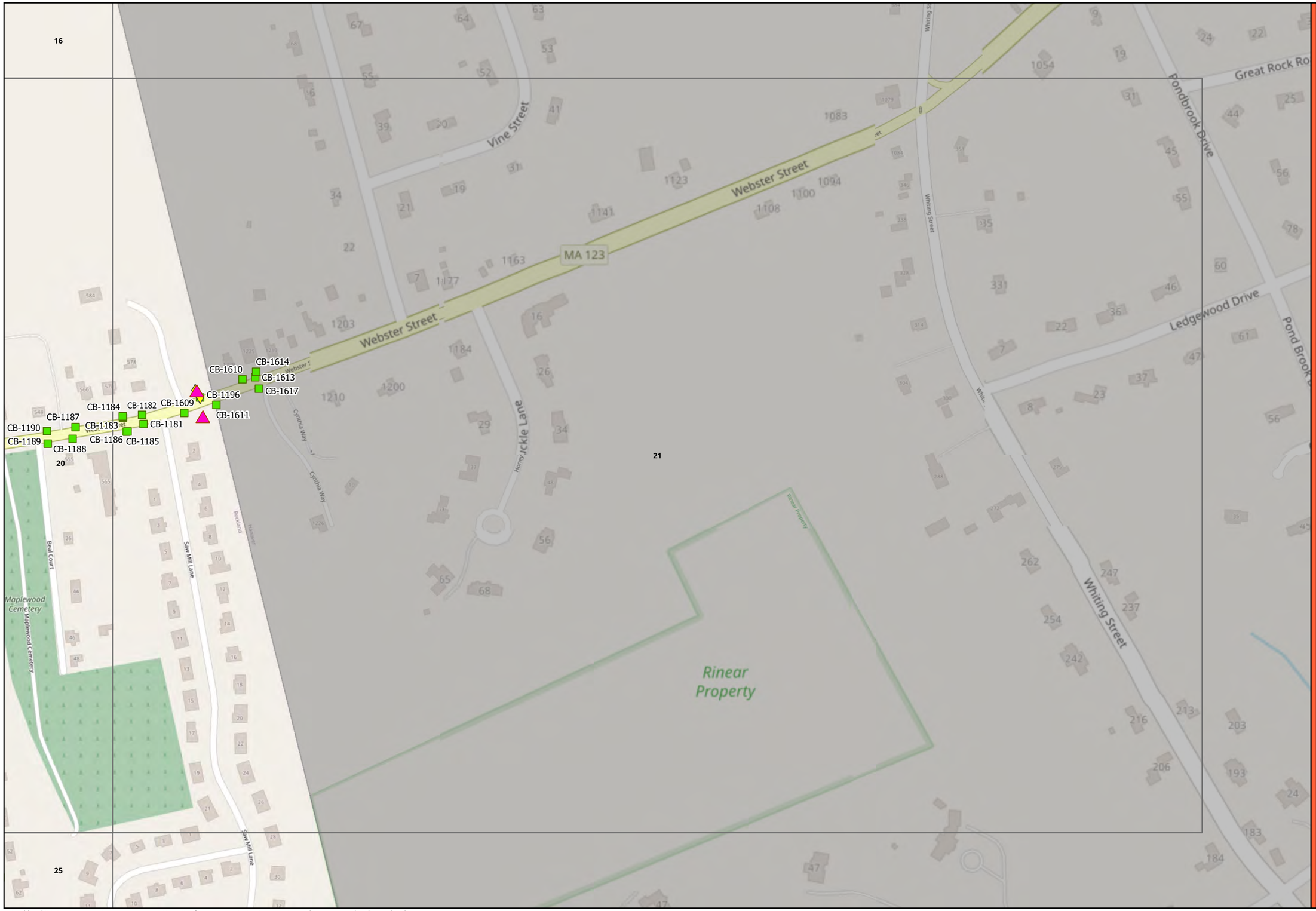
Rockland, Massachusetts

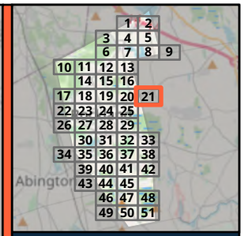
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 21

Stormwater System

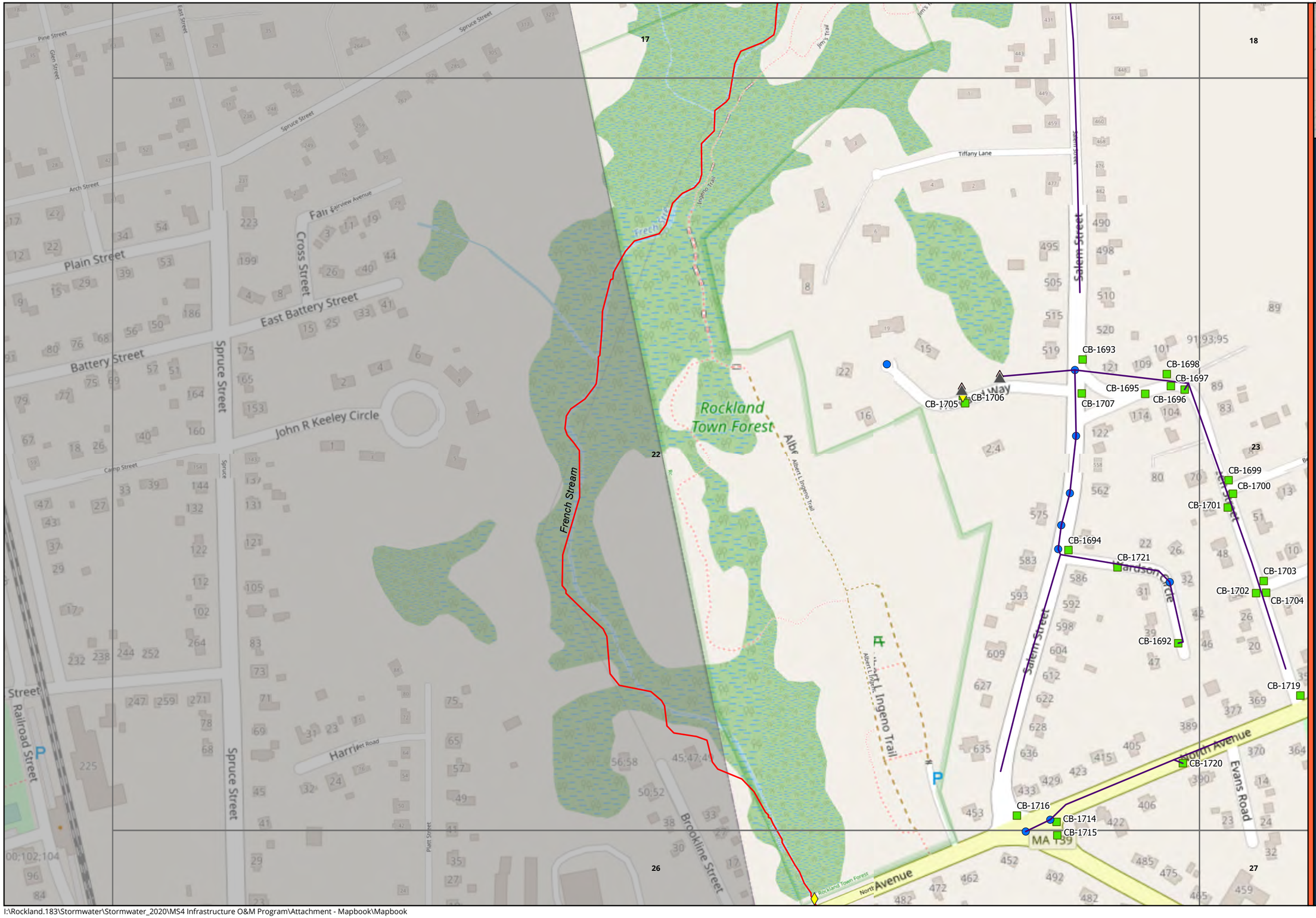
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS



Stormwater System

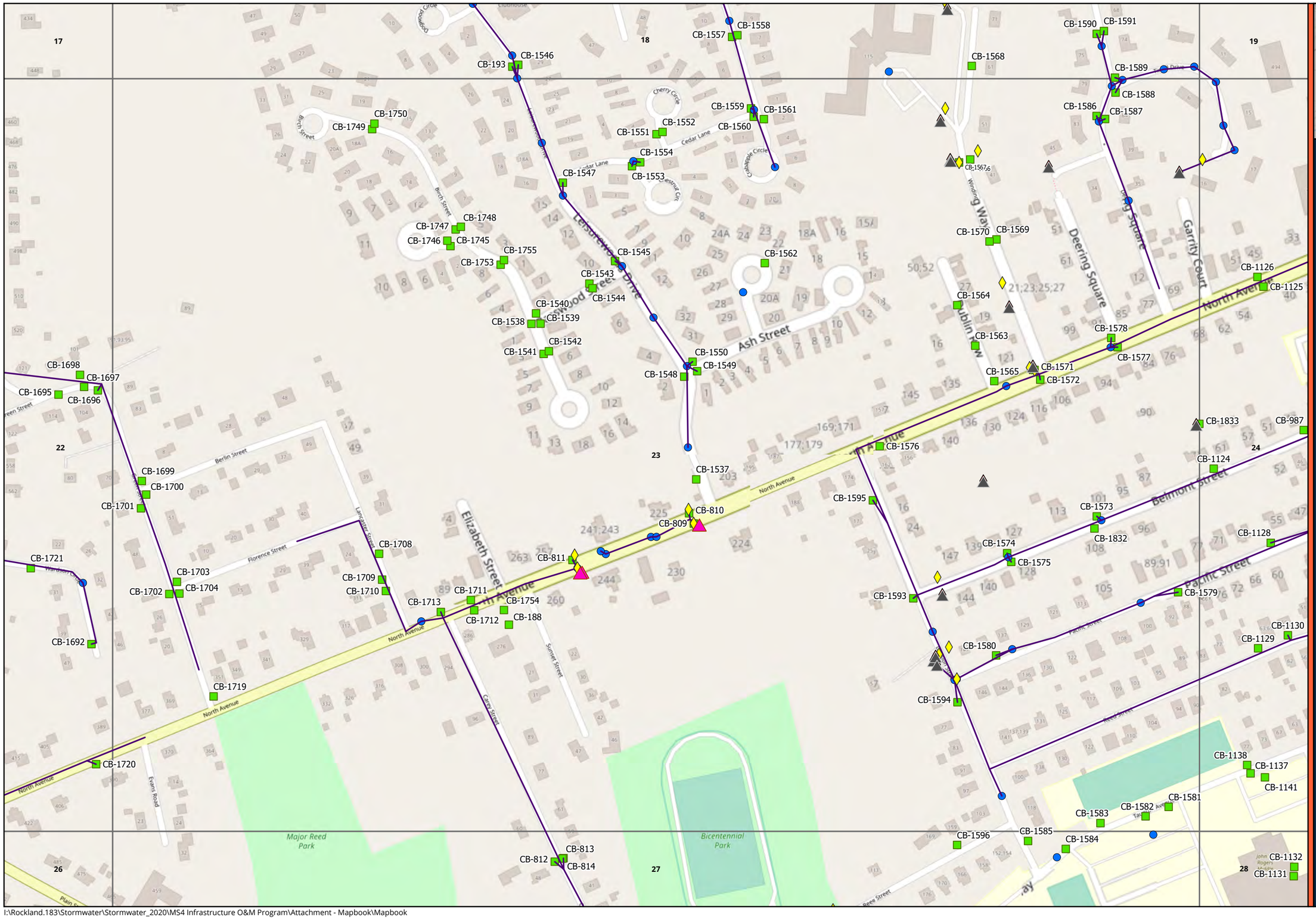
Rockland, Massachusetts

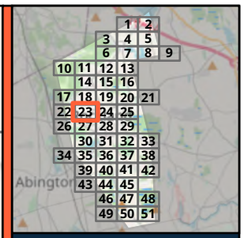
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 23

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS

Stormwater System

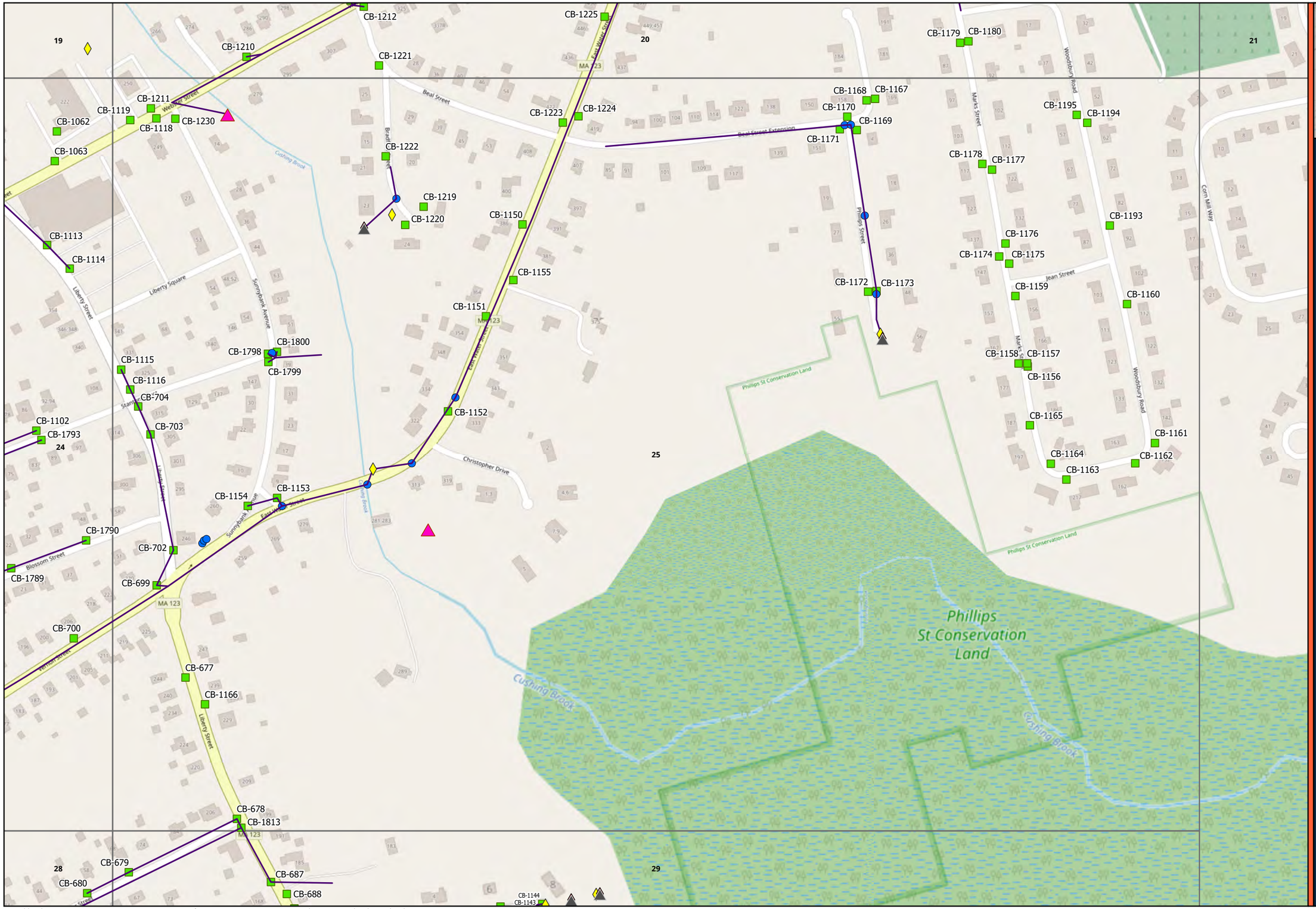
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

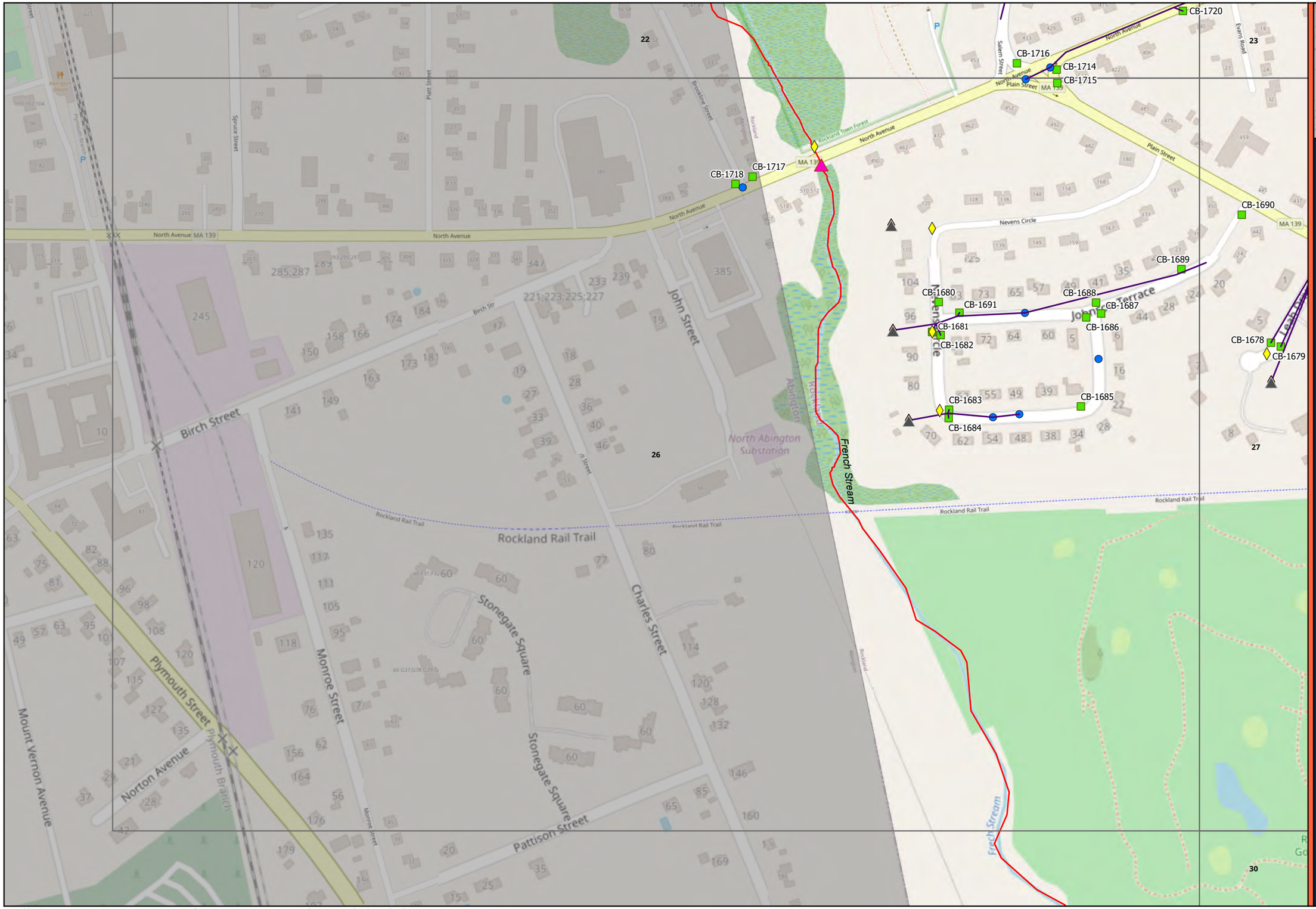
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

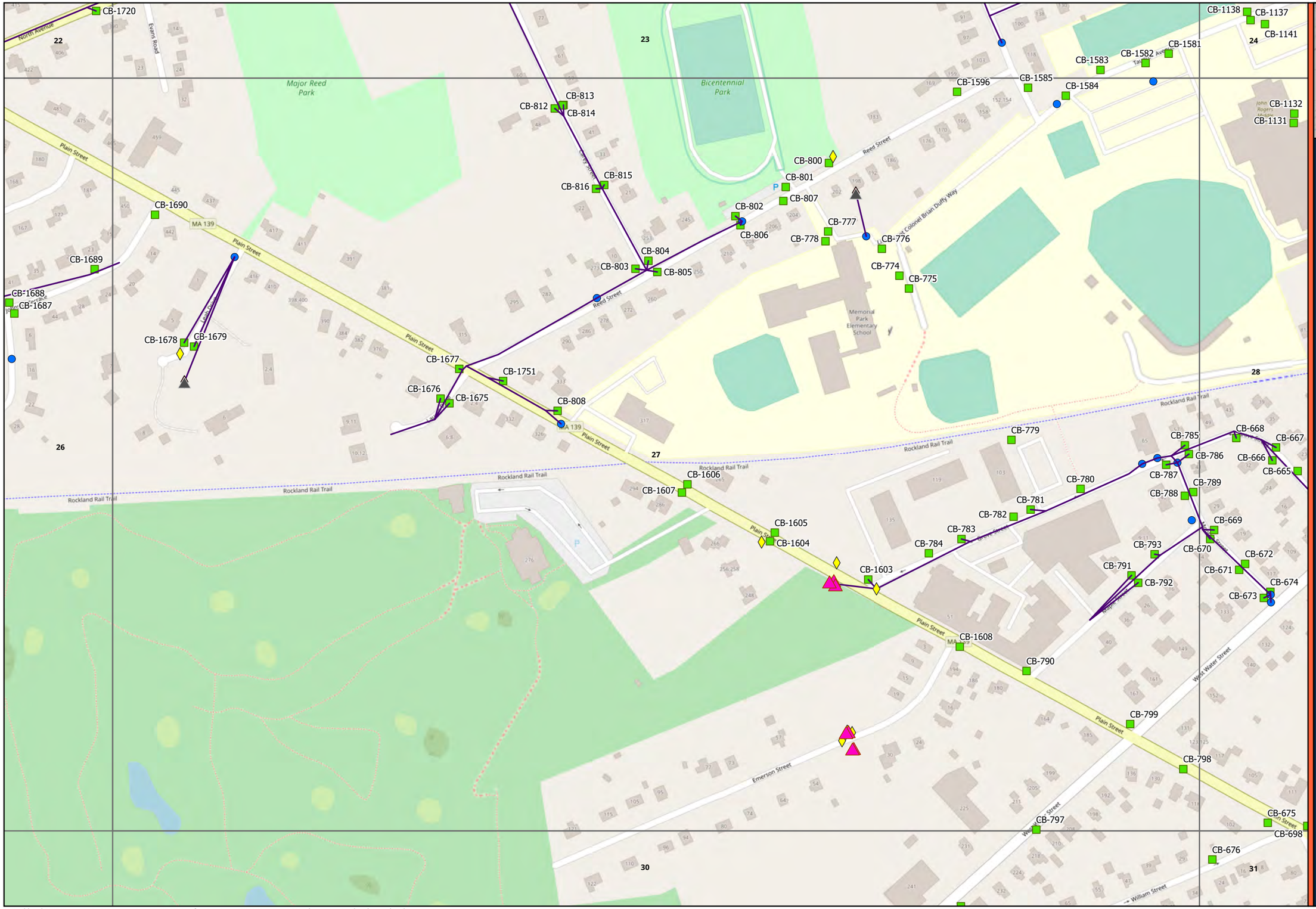
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

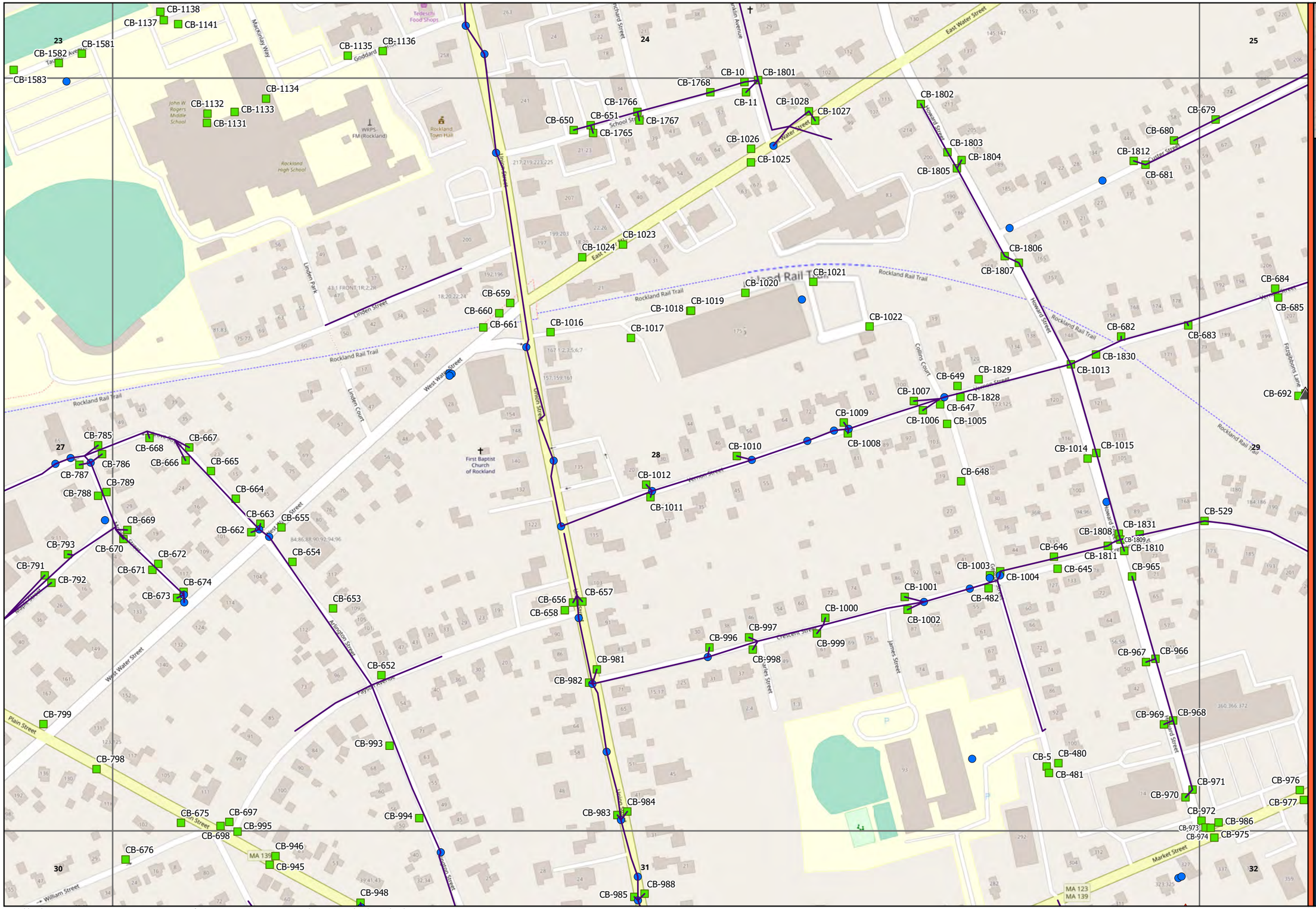
Rockland, Massachusetts

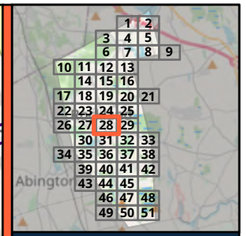
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 28

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

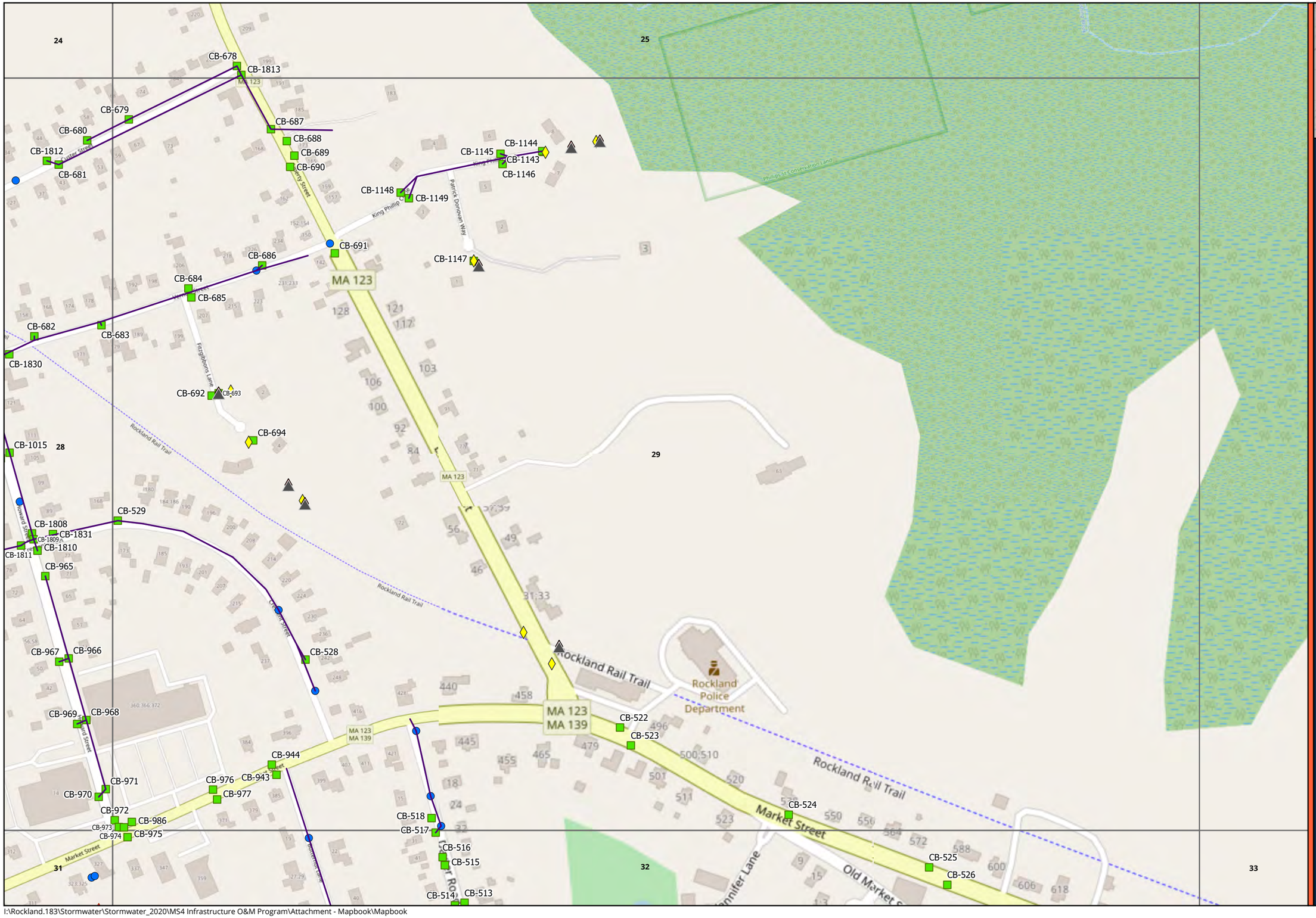
N

0 125 250 Feet

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:22 PM



Page Number: 29

Stormwater System

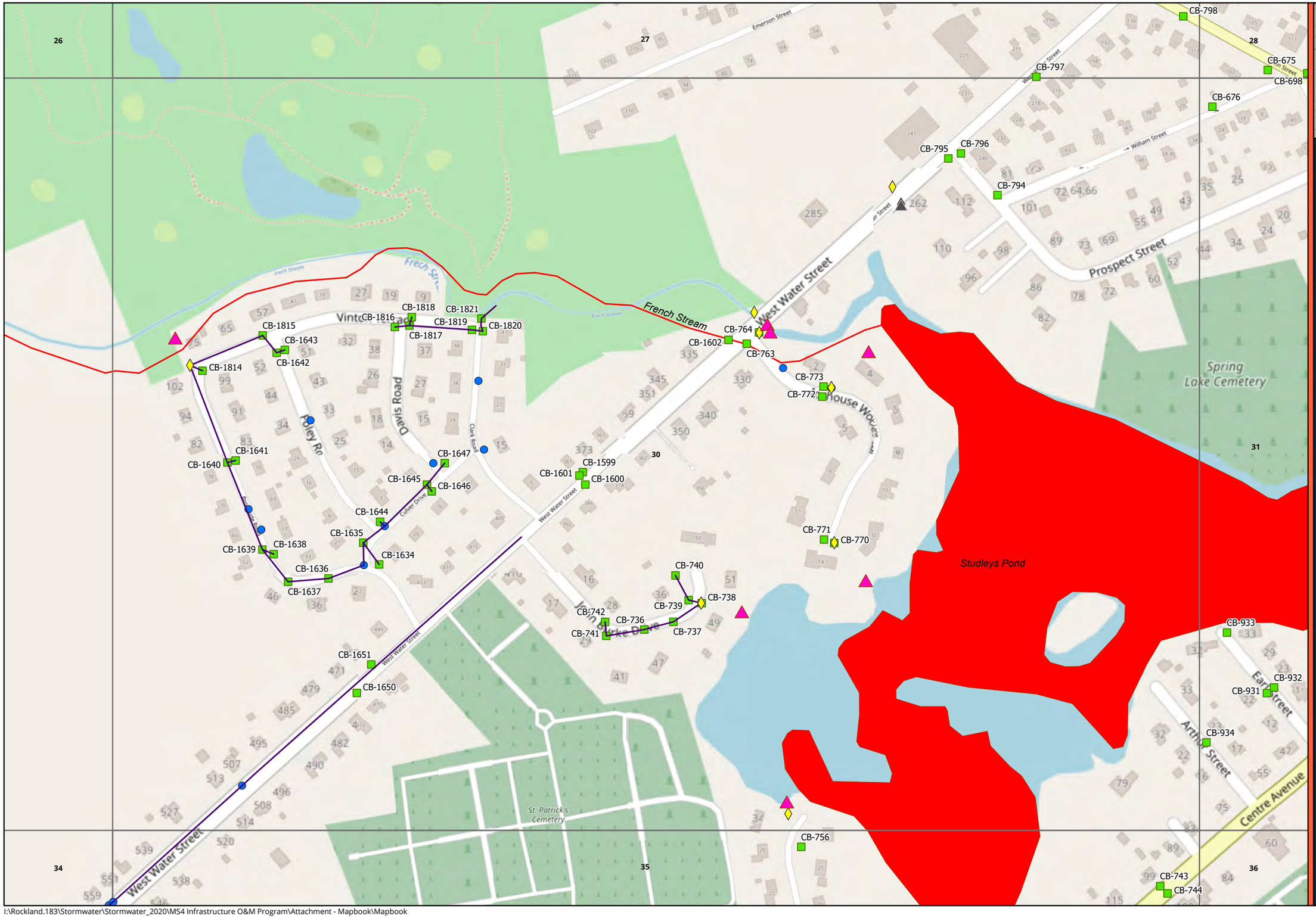
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

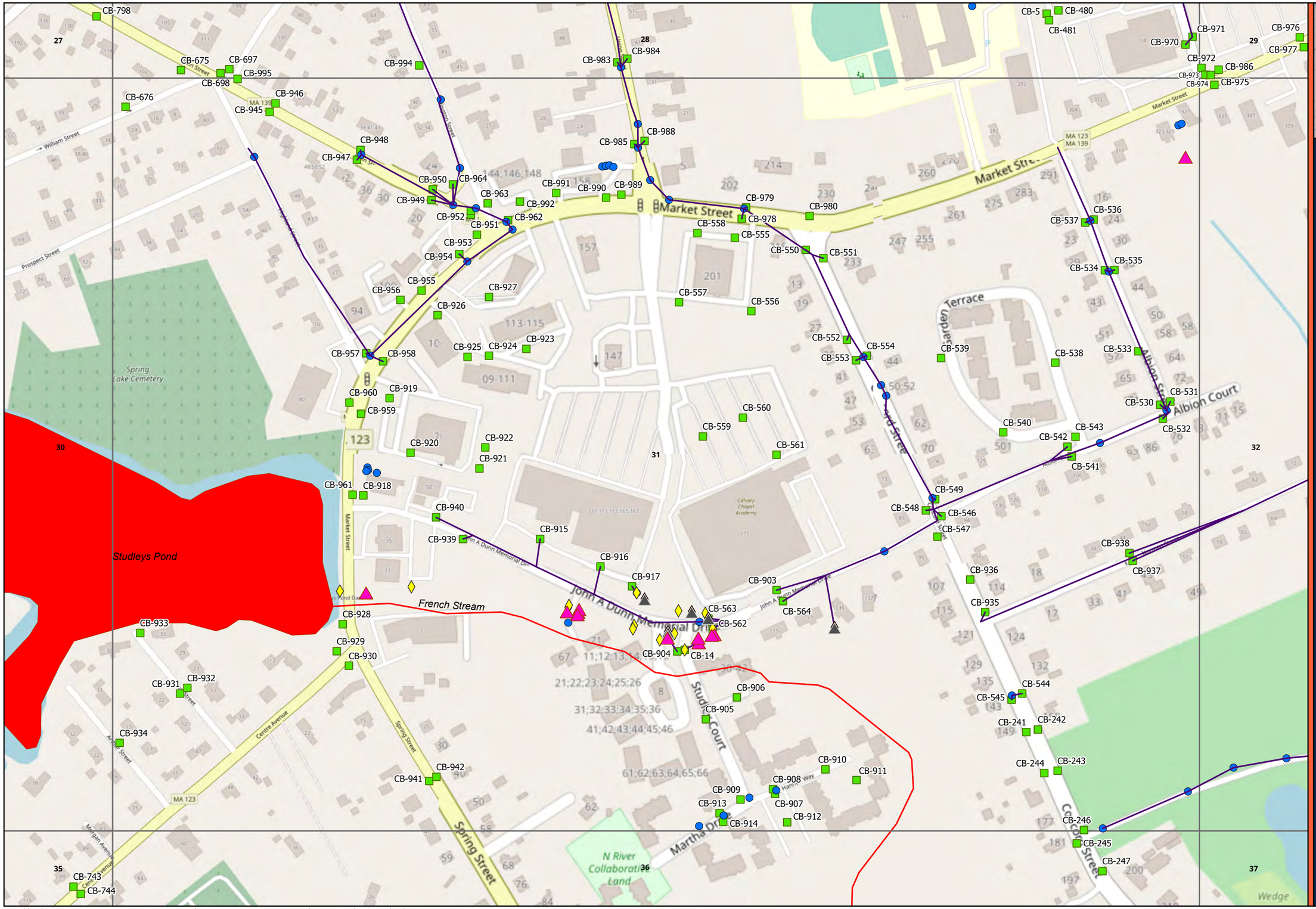
ENVIRONMENTAL PARTNERS



Stormwater System

Rockland, Massachusetts

ENVIRONMENTAL PARTNERS



Stormwater System

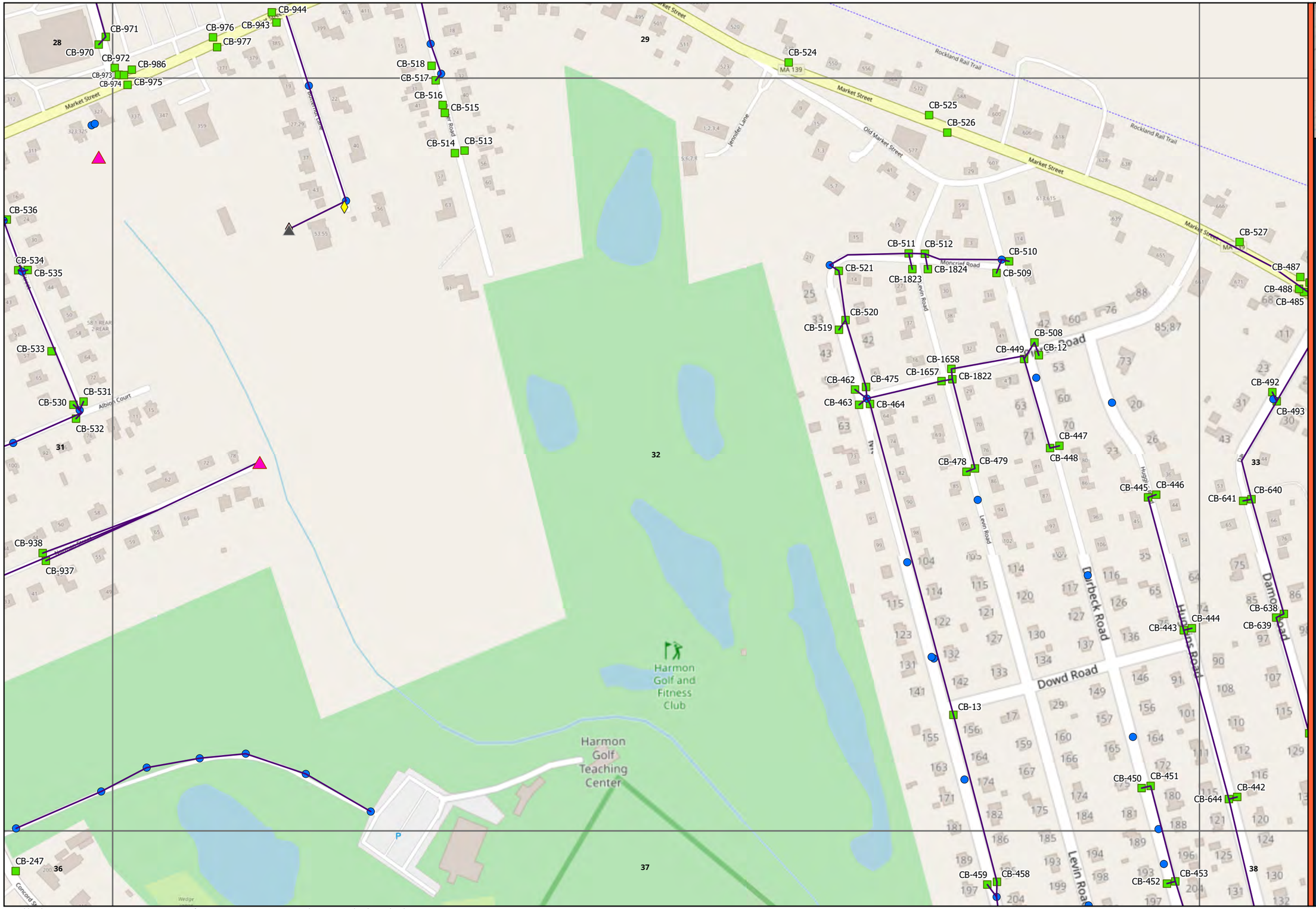
Rockland, Massachusetts

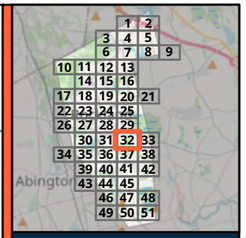
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 32

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

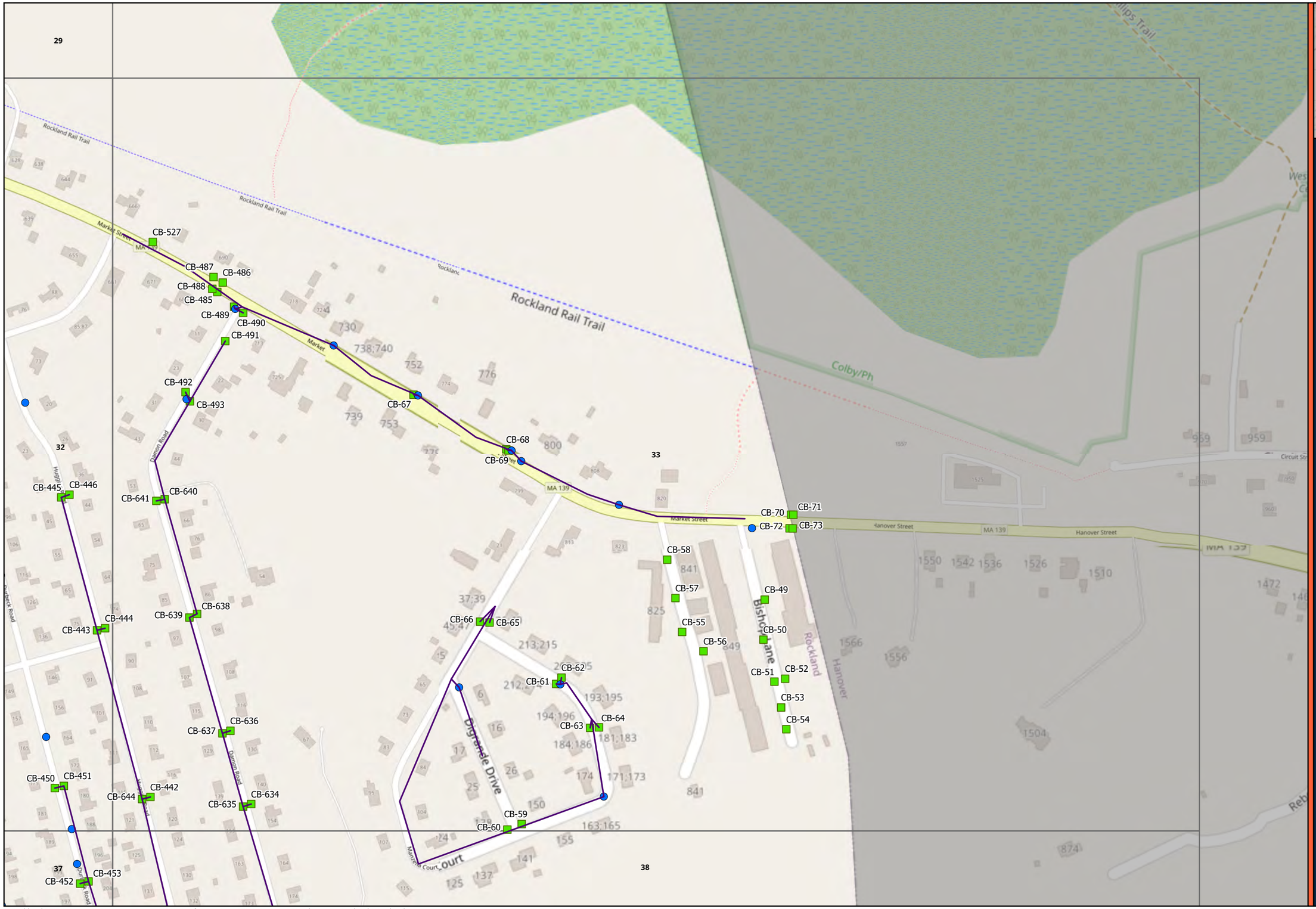
N

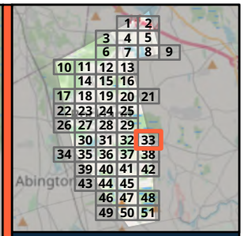
0 125 250 Feet

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:22 PM





Page Number: 33

Stormwater System

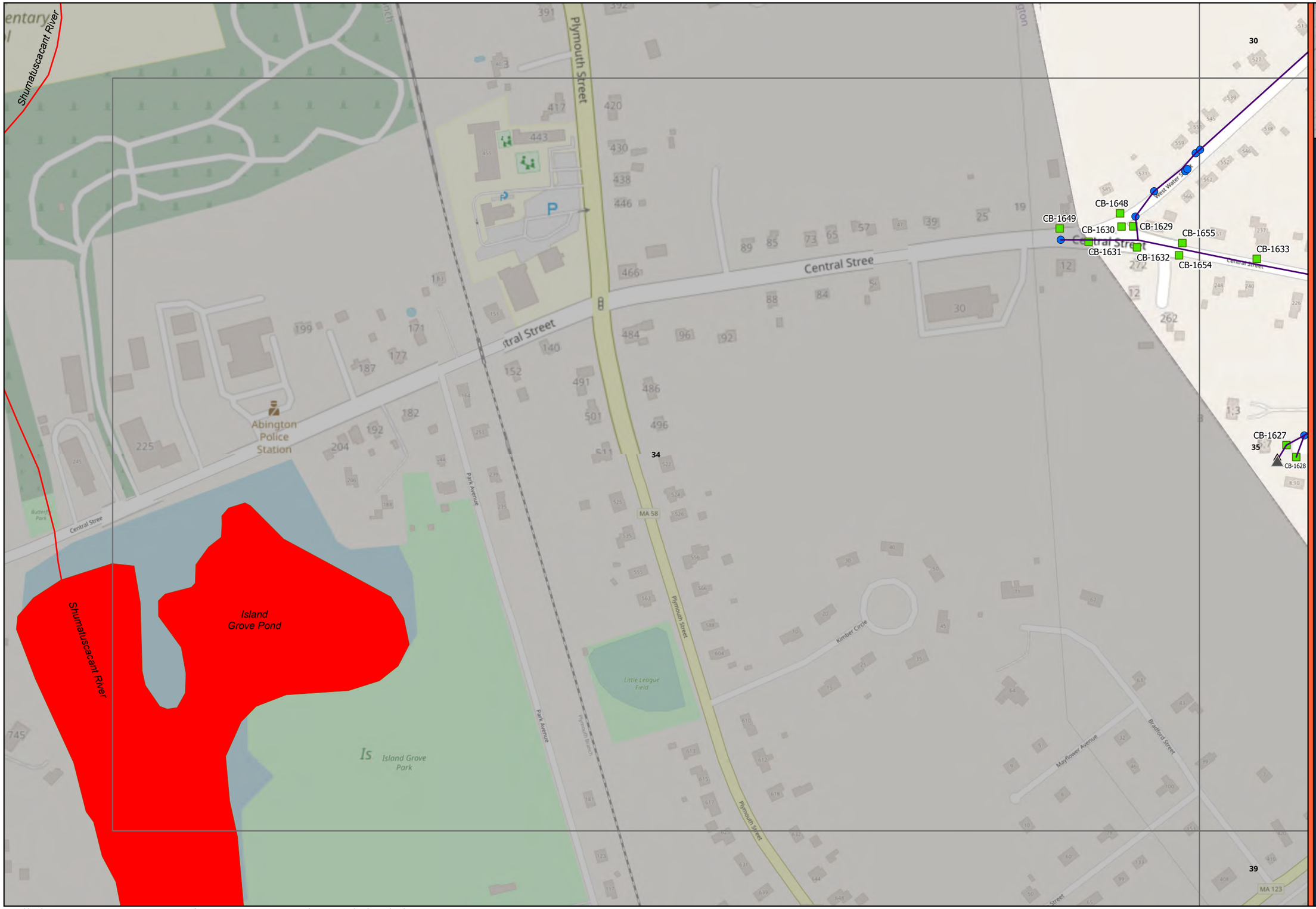
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250
Feet

ENVIRONMENTAL PARTNERS



Stormwater System

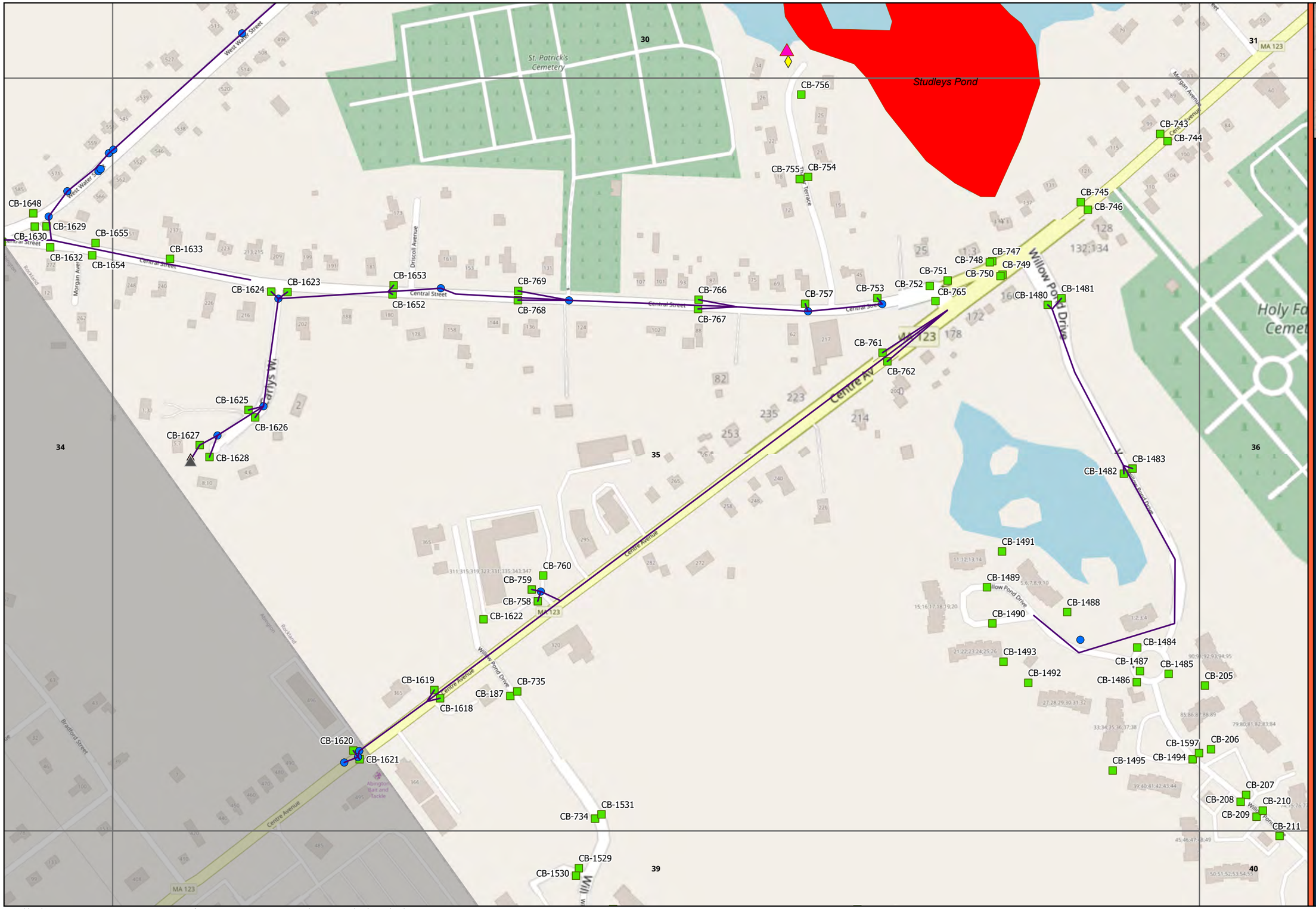
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

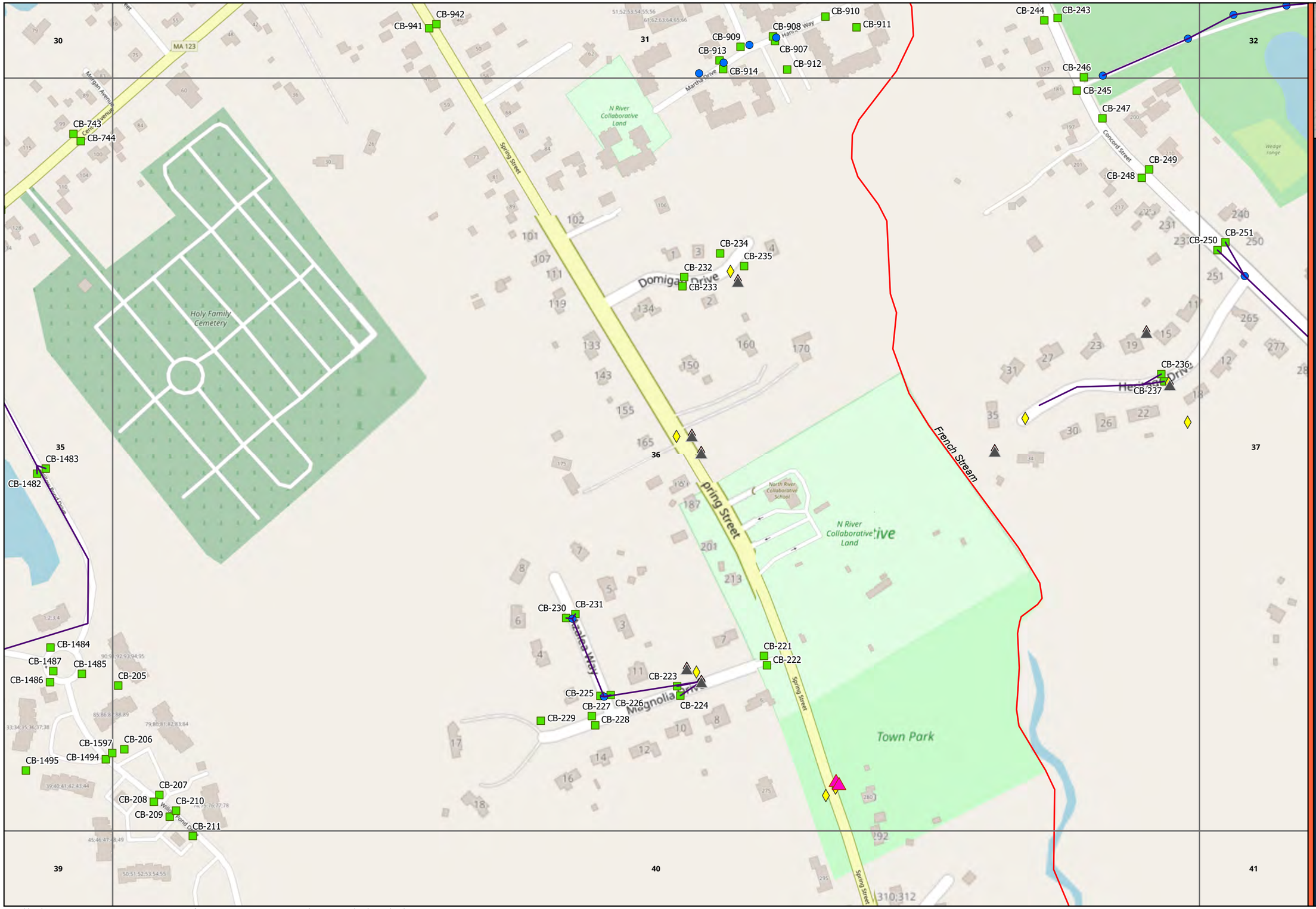
Rockland, Massachusetts

MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

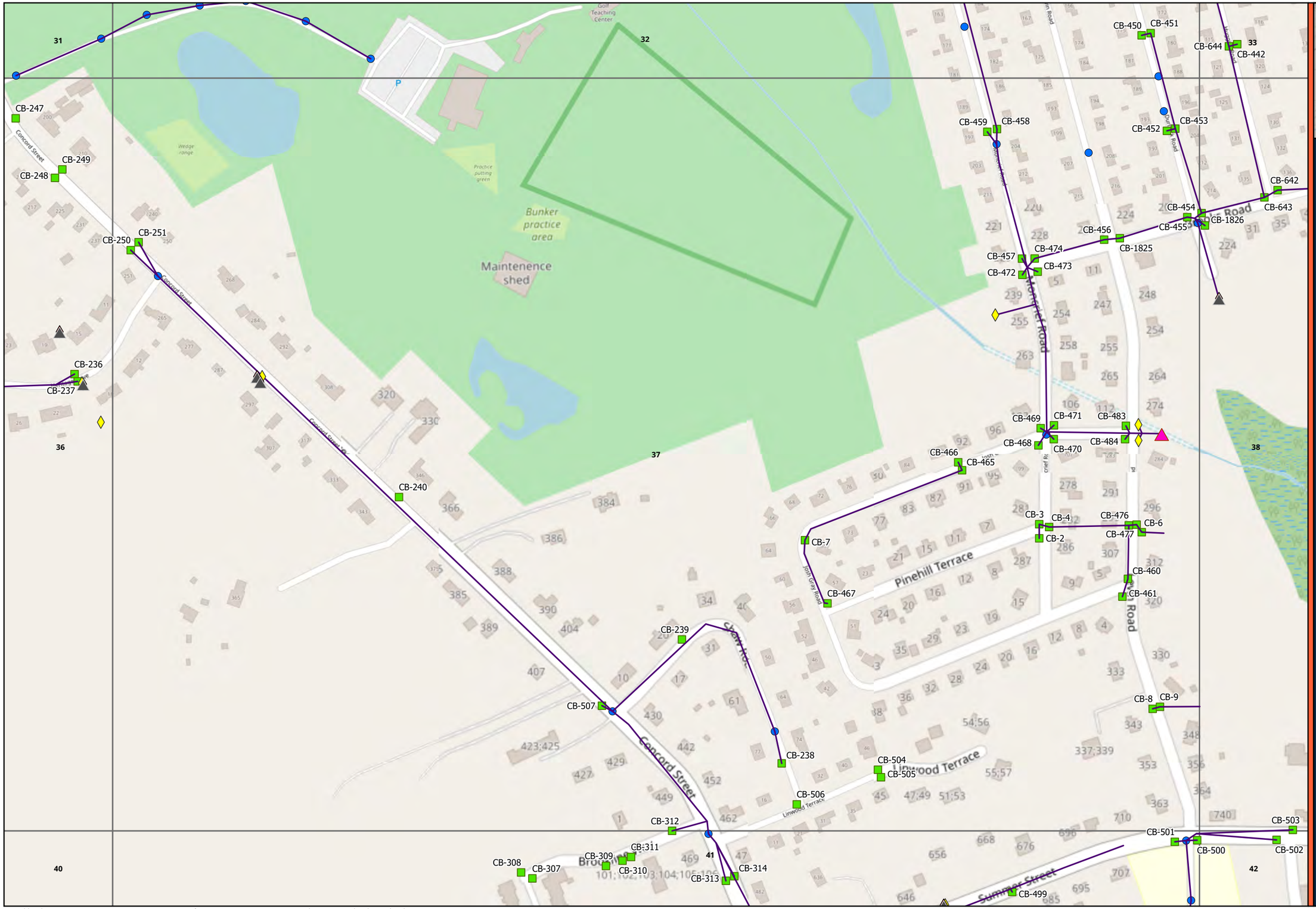
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

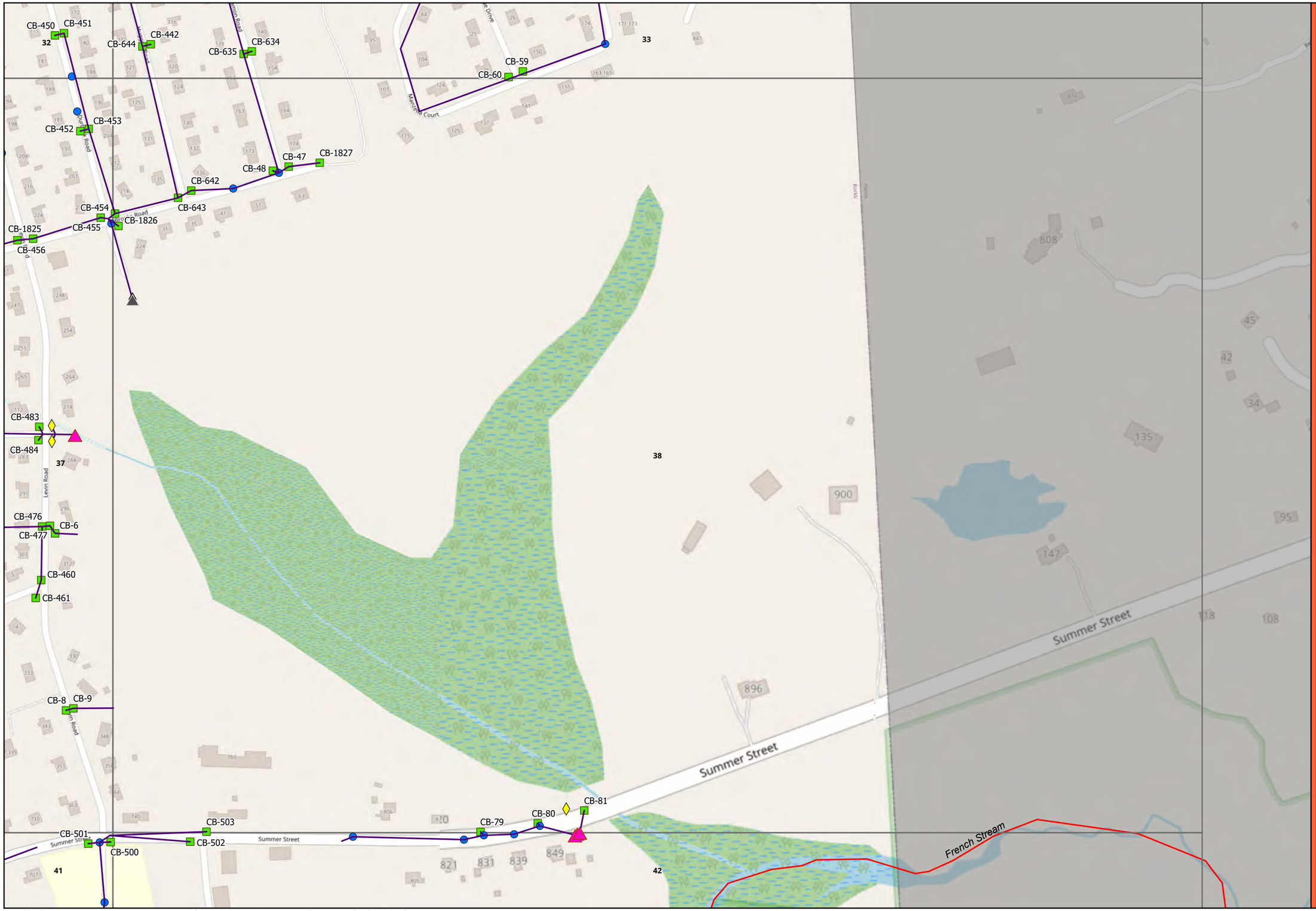
Rockland, Massachusetts

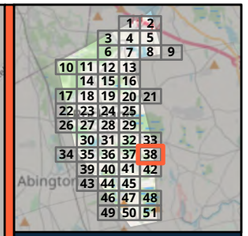
MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Stormwater System

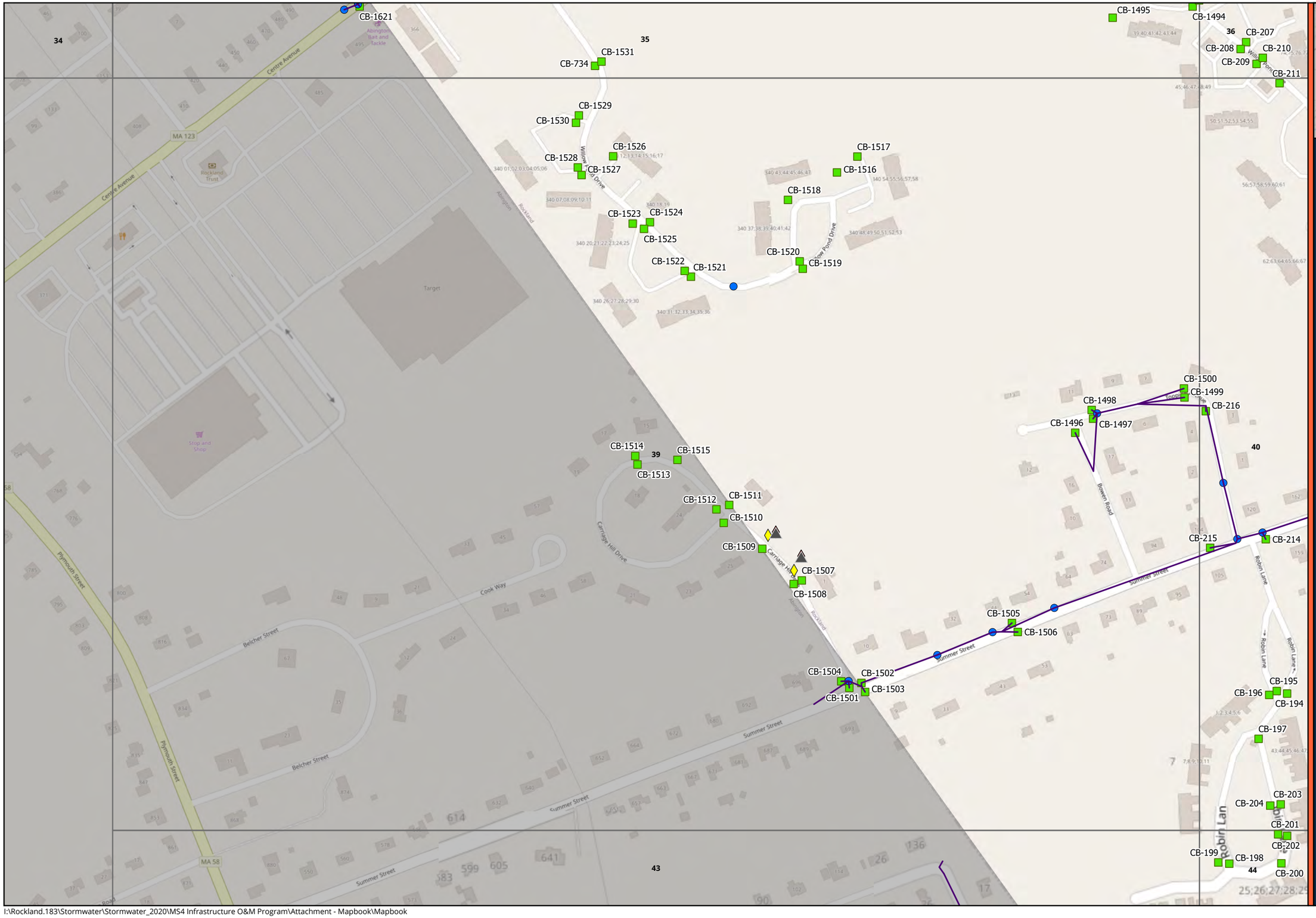
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

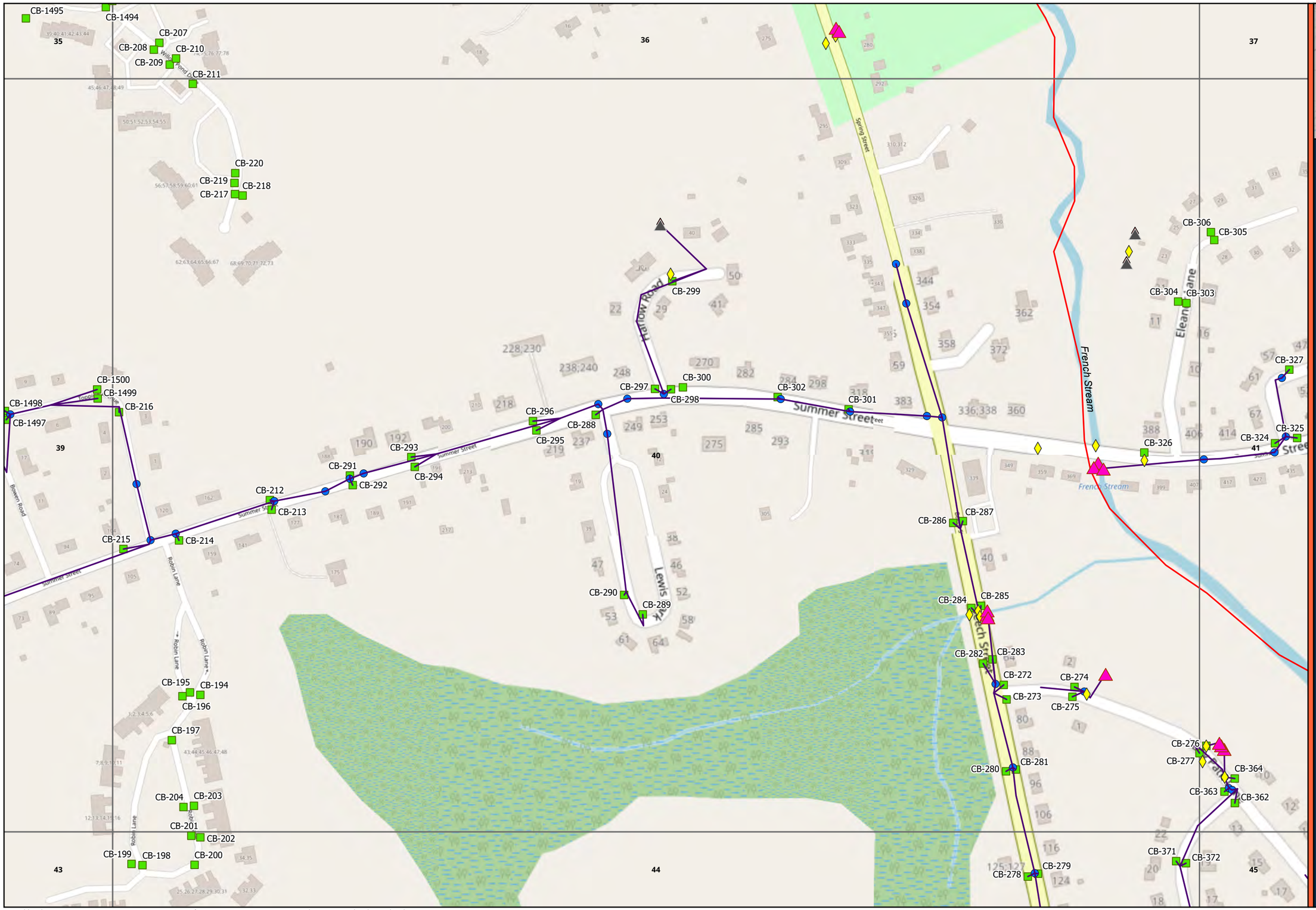
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

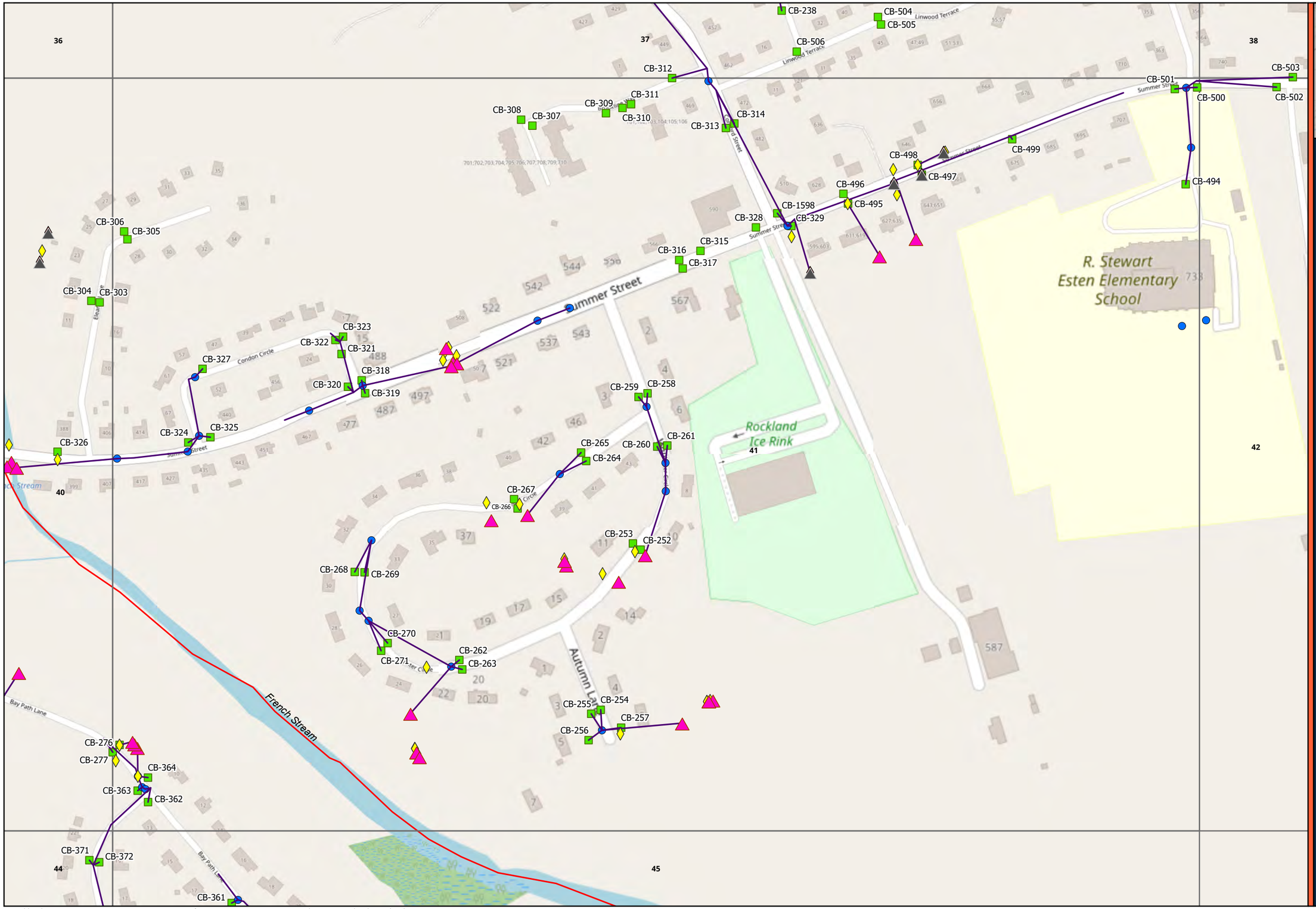
Rockland, Massachusetts

MS4 Outfall
Upland Outfall
Manhole
Catch Basin
Inlet
Outlet
Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

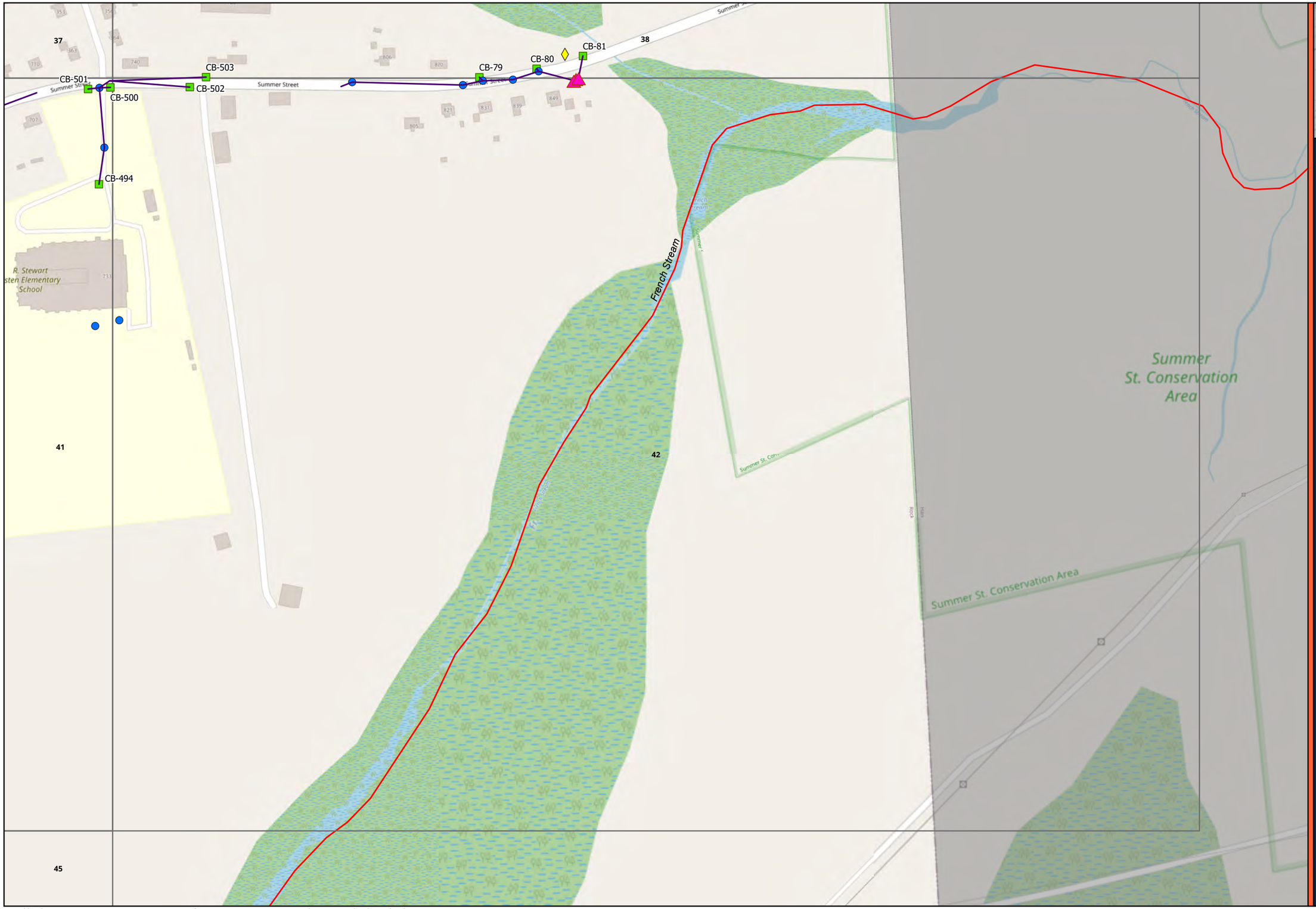
Rockland, Massachusetts

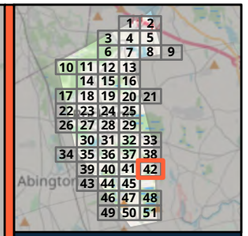
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Stormwater System

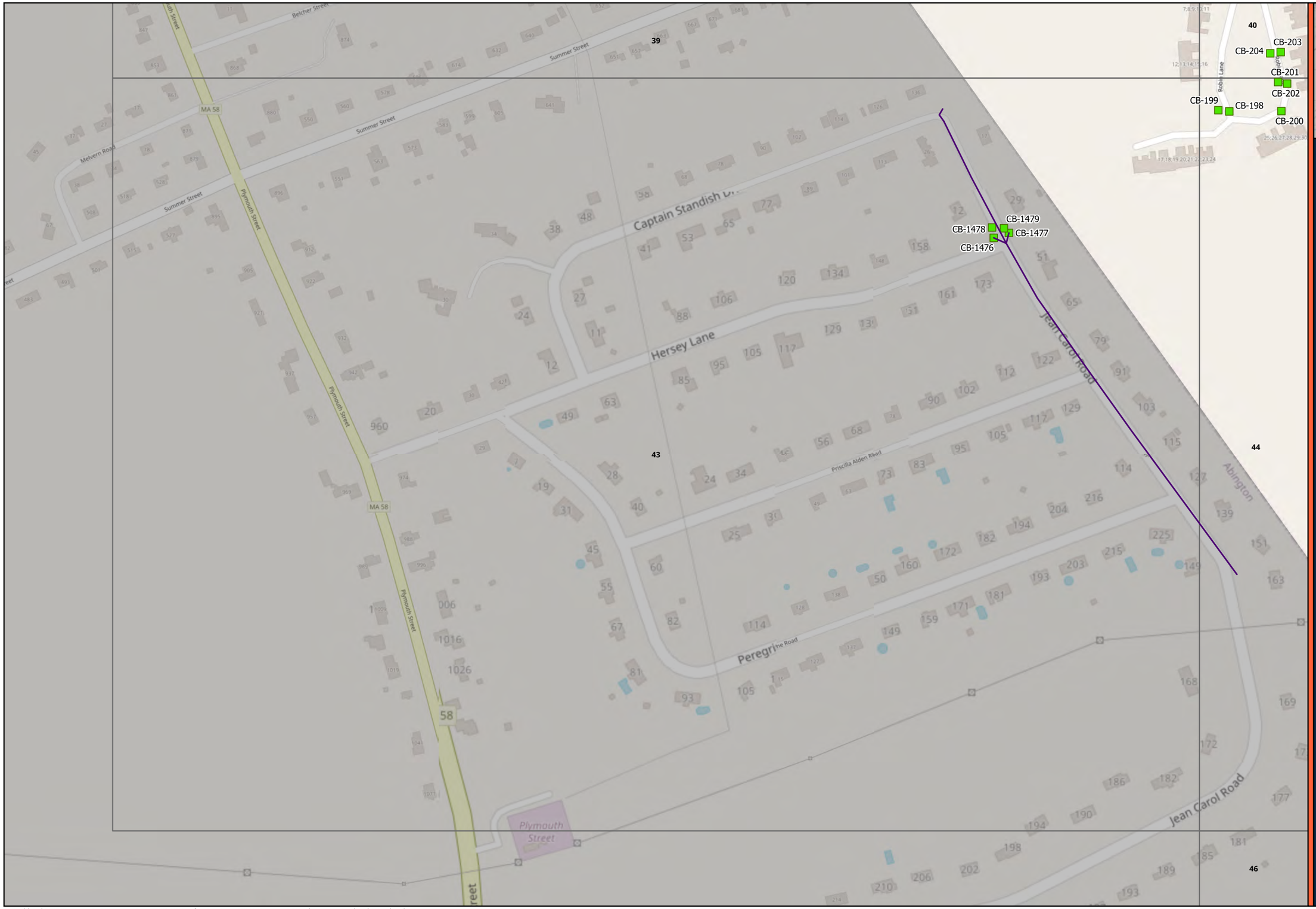
Rockland, Massachusetts

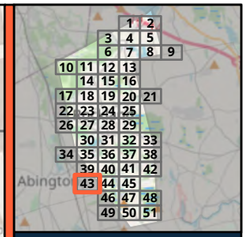
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 43

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

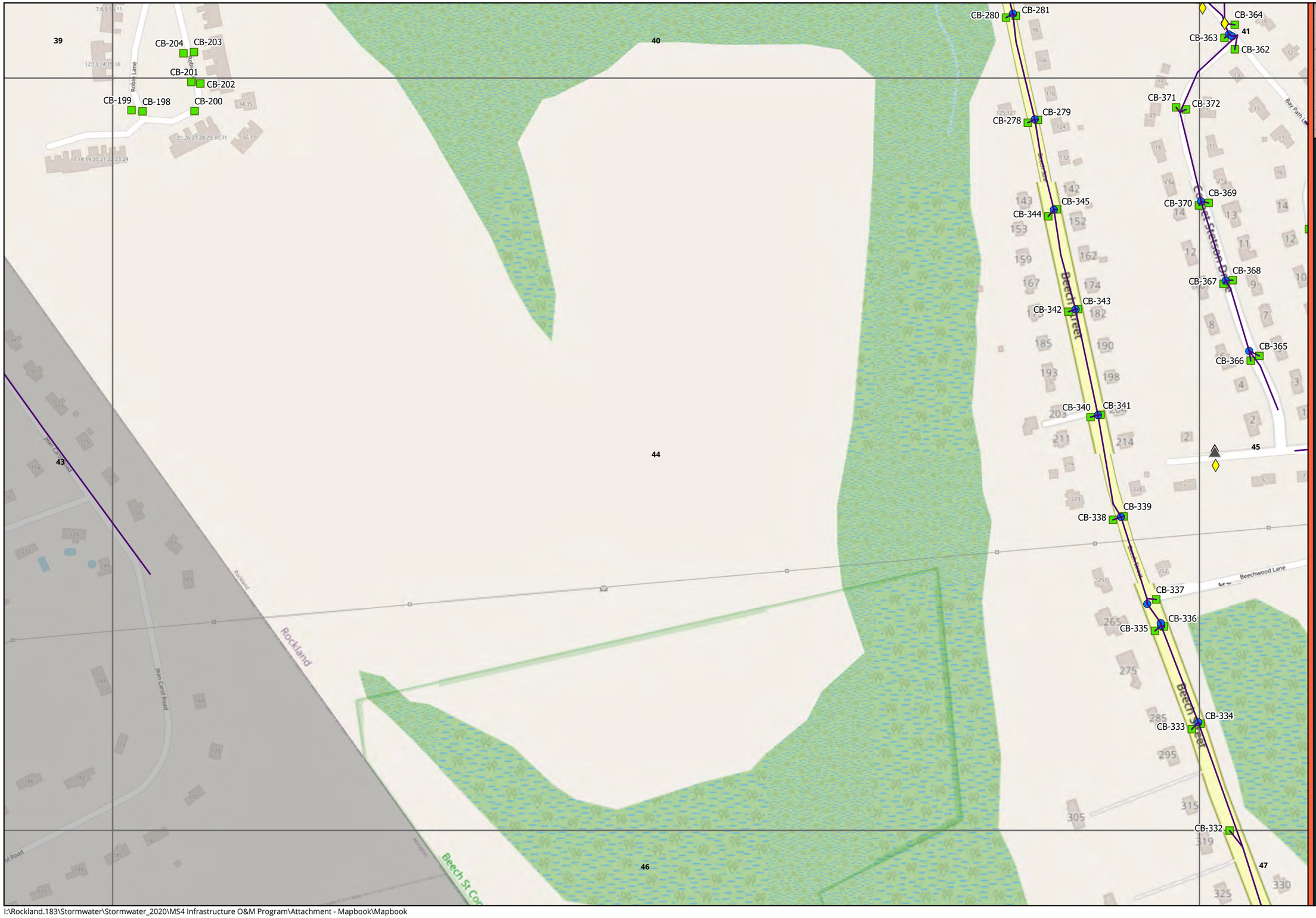
N

0 125 250
Feet

ENVIRONMENTAL PARTNERS

I:\Rockland.183\Stormwater\Stormwater_2020\MS4 Infrastructure O&M Program\Attachment - Mapbook\Mapbook

Date Exported: 7/29/2020 3:22 PM



Stormwater System

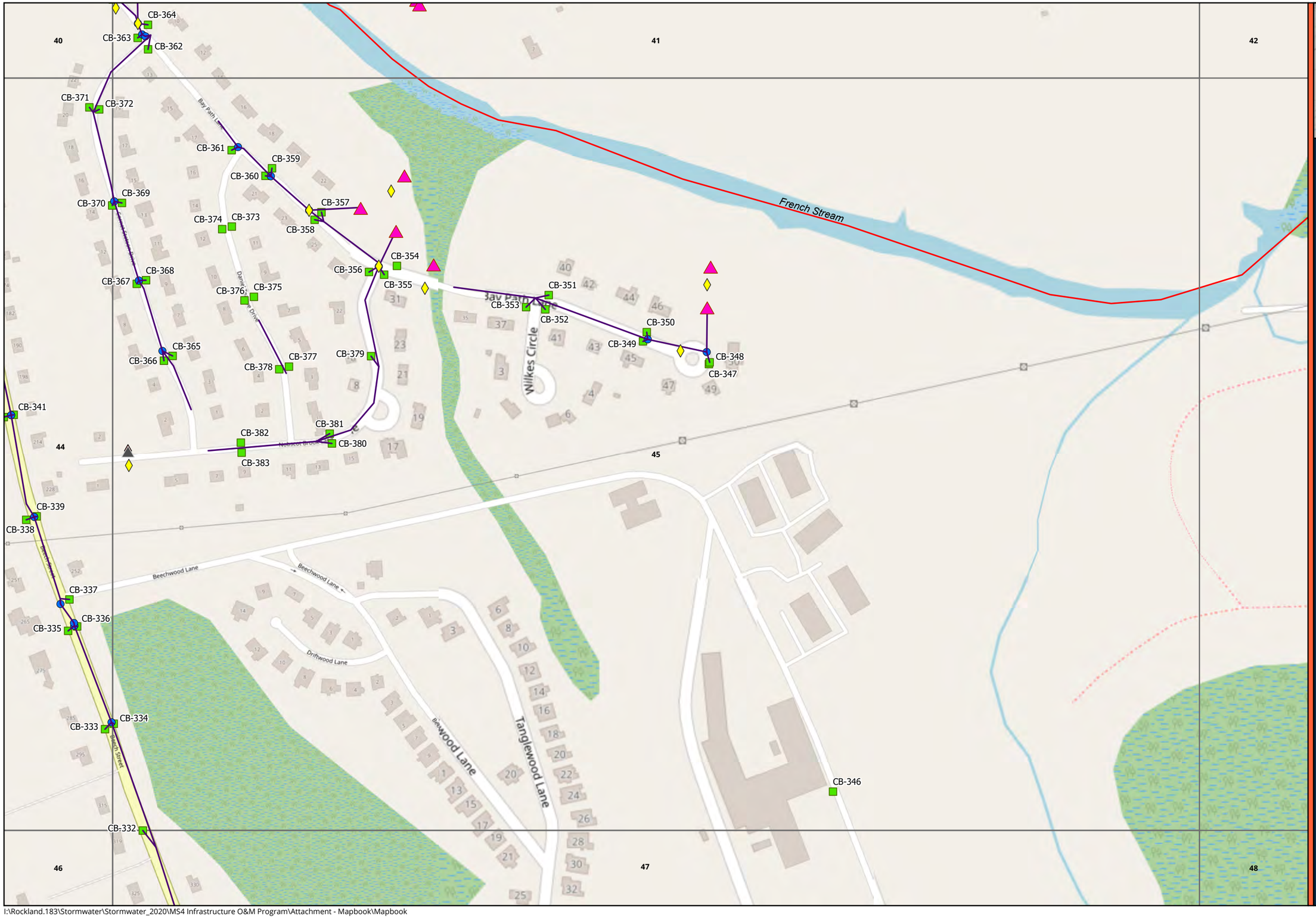
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS

Stormwater System

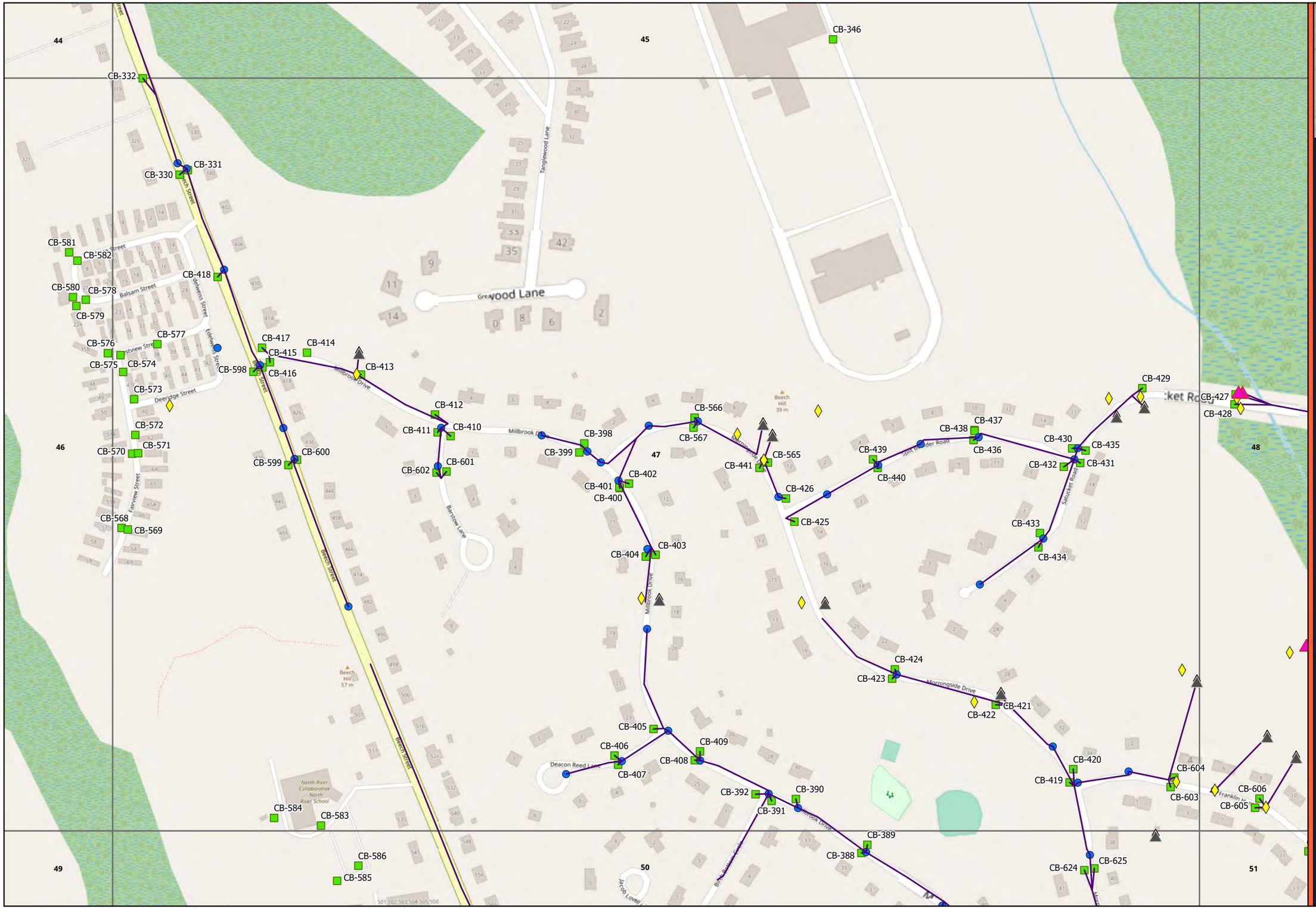
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

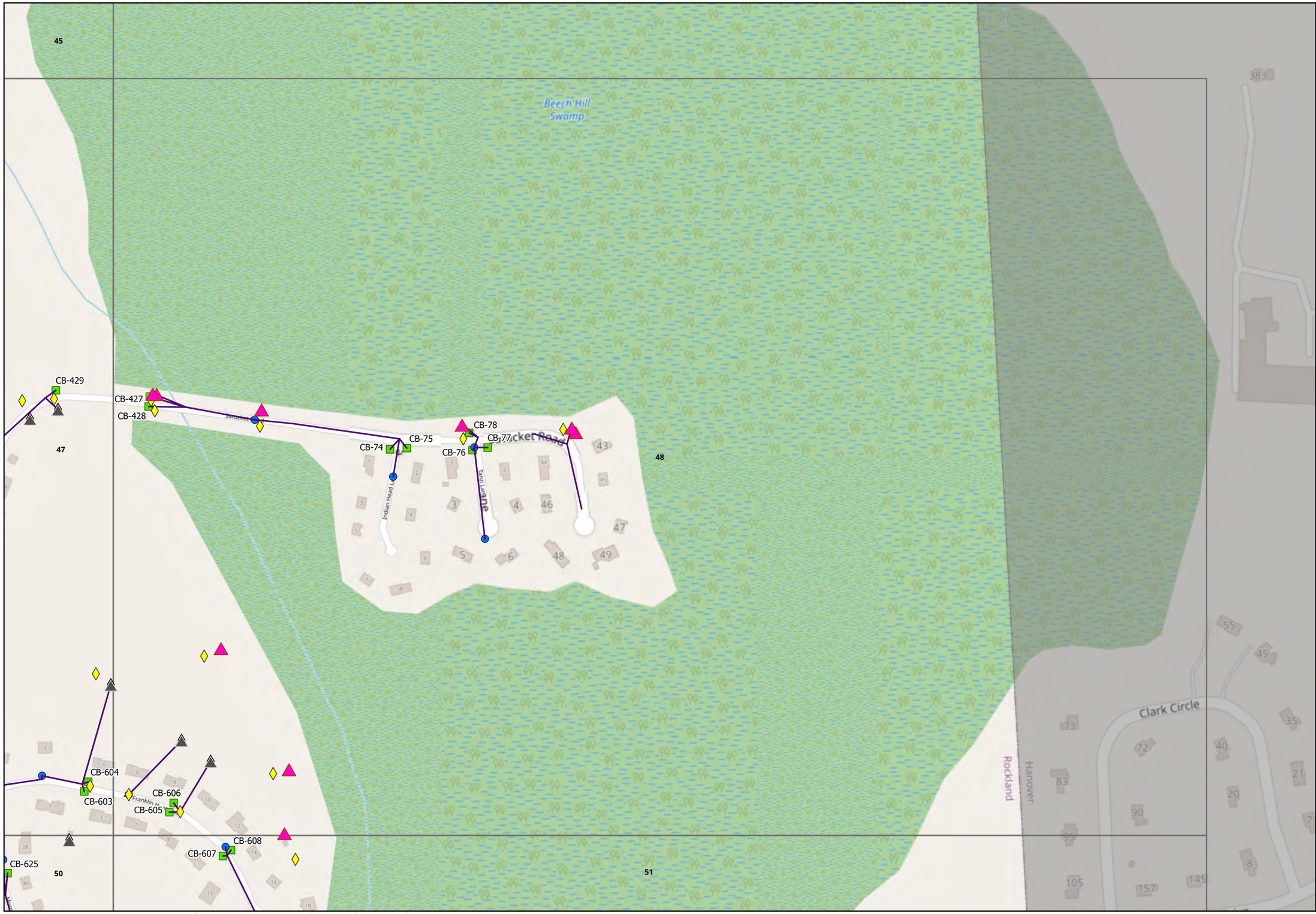
Rockland, Massachusetts

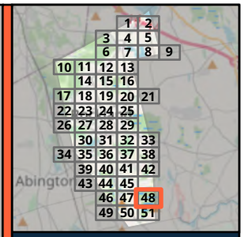
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 48

Stormwater System

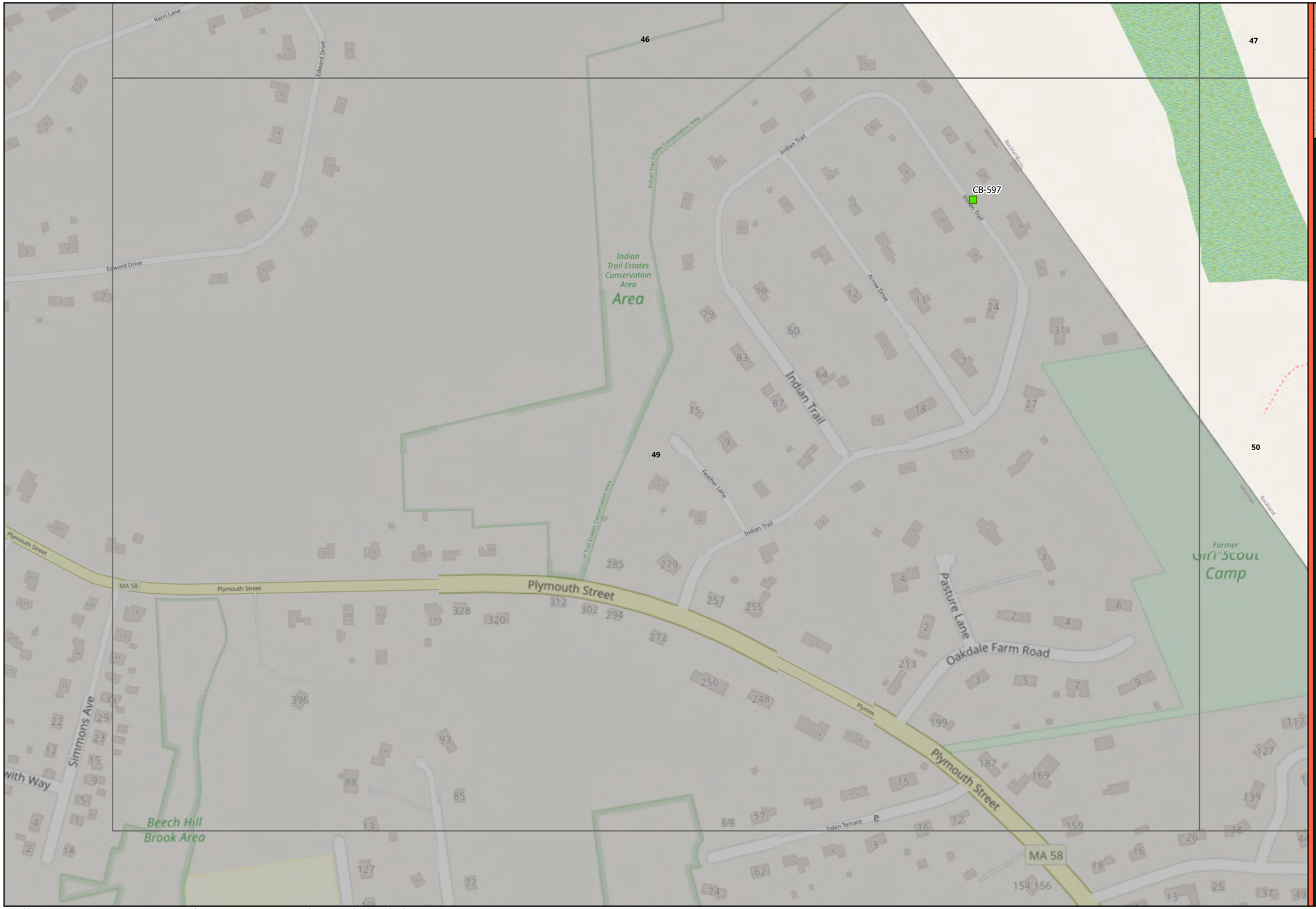
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Page Number: 49

Stormwater System

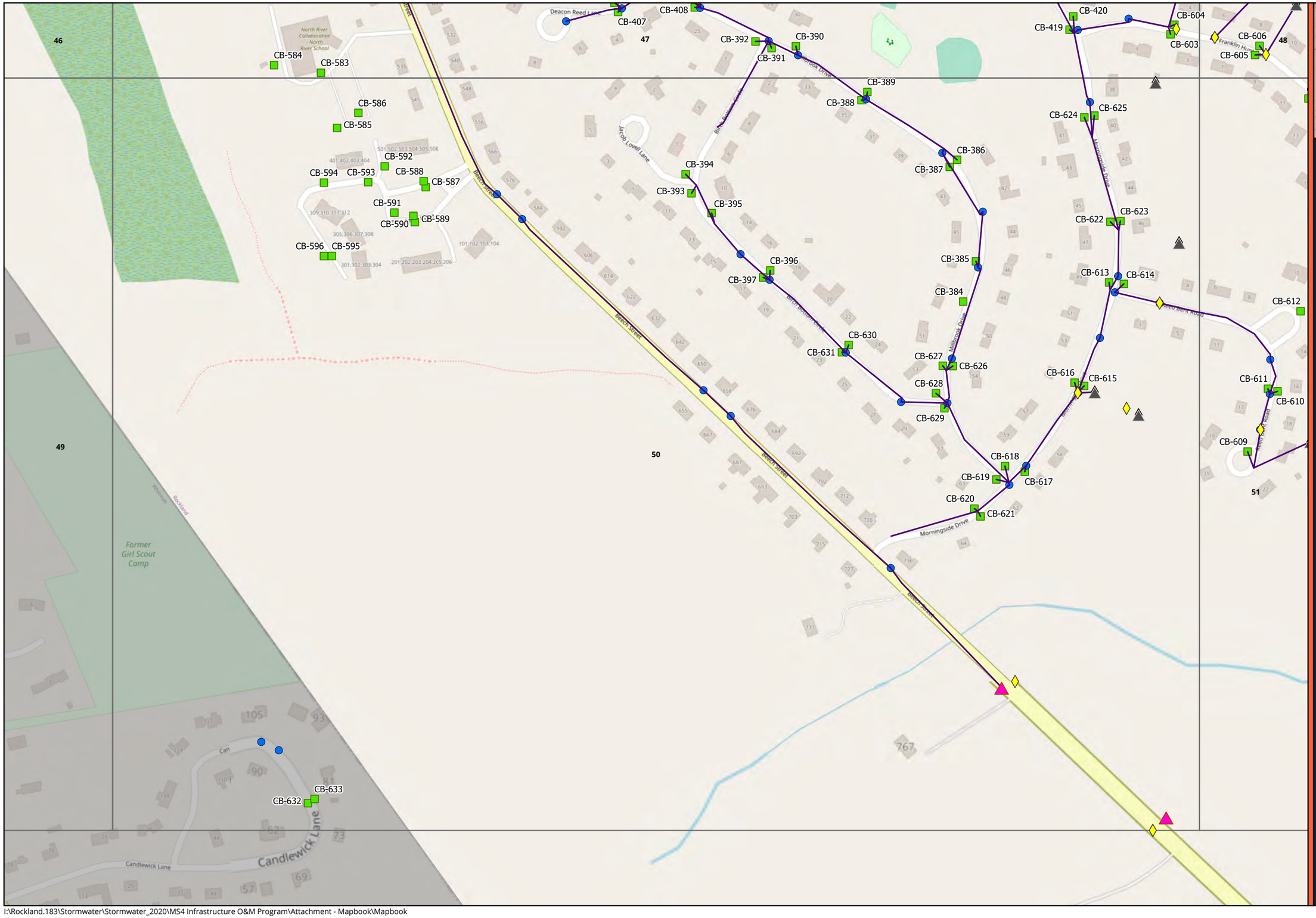
Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS



Stormwater System

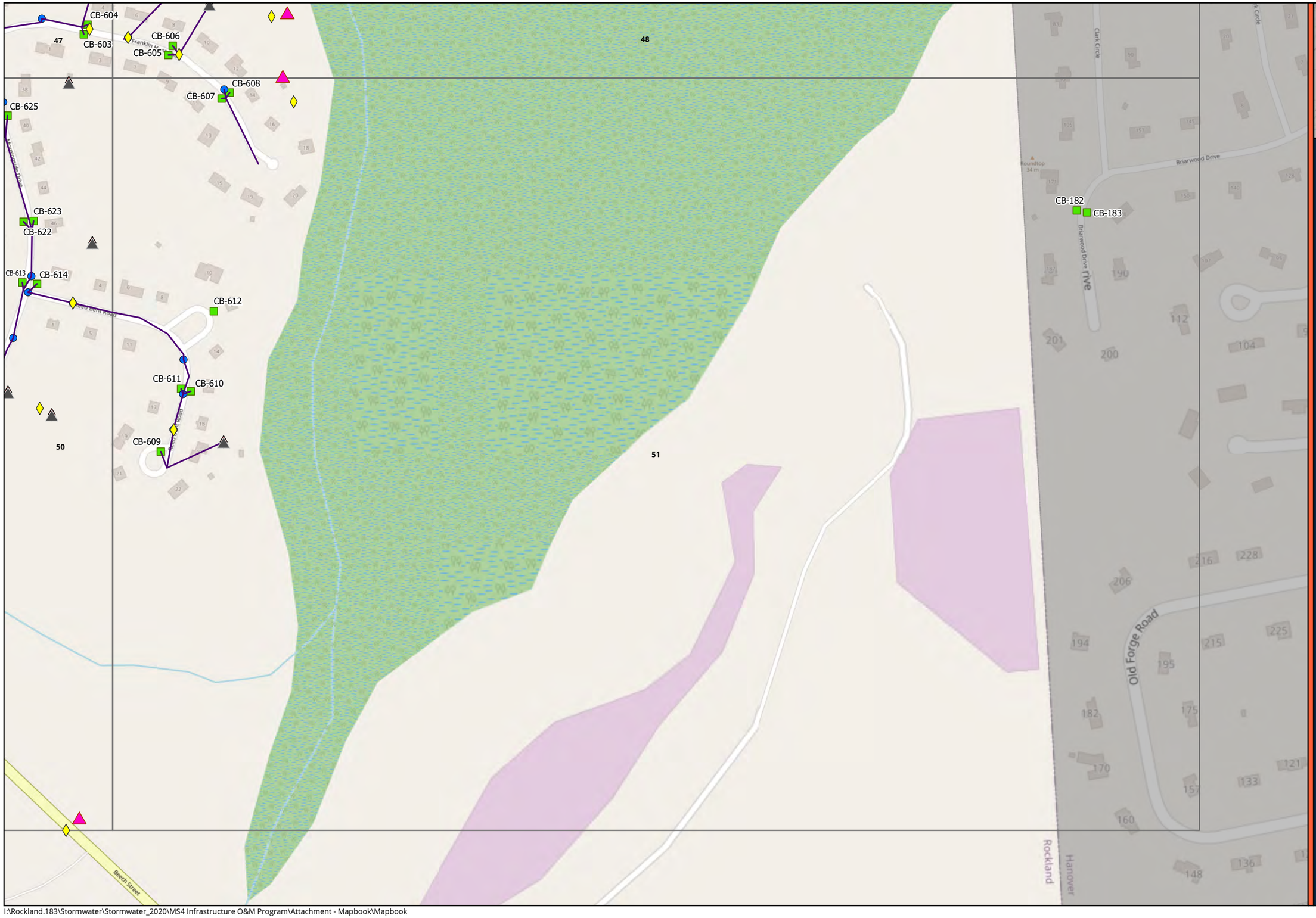
Rockland, Massachusetts

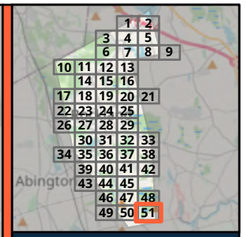
- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250 Feet

ENVIRONMENTAL PARTNERS





Page Number: 51

Stormwater System

Rockland, Massachusetts

- MS4 Outfall
- Upland Outfall
- Manhole
- Catch Basin
- Inlet
- Outlet
- Drain Pipes

N

0 125 250
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 Rockland

September 2023

ENVIRONMENTAL PARTNERS

— An Apex Company —

TABLE OF CONTENTS

LIST OF TABLES ..... **III**

LIST OF FIGURES ..... **IV**

LIST OF APPENDICIES ..... **V**

SECTION 1 INTRODUCTION **1**

SECTION 1.1 MS4 PROGRAM 1

SECTION 1.2 ILLICIT DISCHARGES 1

SECTION 1.3 ALLOWABLE NON-STORMWATER DISCHARGES 2

SECTION 1.4 RECEIVING WATERS AND IMPAIRMENTS 3

SECTION 1.5 IDDE PROGRAM GOALS, FRAMEWORK, AND TIMELINE 5

SECTION 1.6 WORK COMPLETED TO DATE UNDER THE 2003 MS4 PERMIT 7

SECTION 2 AUTHORITY AND STATEMENT OF IDDE RESPONSIBILITIES **8**

SECTION 2.1 LEGAL AUTHORITY 8

SECTION 2.2 STATEMENT OF RESPONSIBILITIES 8

SECTION 3 STORMWATER SYSTEM MAPPING **9**

SECTION 3.1 PHASE I MAPPING 9

SECTION 3.2 PHASE II MAPPING 10

SECTION 3.3 ADDITIONAL RECOMMENDED MAPPING ELEMENTS 11

SECTION 4 SANITARY SEWER OVERFLOWS (SSOS) **12**

SECTION 5 ASSESSMENT AND PRIORITY RANKING OF OUTFALLS **14**

SECTION 5.1 OUTFALL CATCHMENT DELINEATIONS 14

SECTION 5.2 OUTFALL AND INTERCONNECTION INVENTORY AND INITIAL RANKING 14

SECTION 6 DRY WEATHER OUTFALL SCREENING AND SAMPLING **17**

SECTION 6.1 WEATHER CONDITIONS 17

SECTION 6.2 DRY WEATHER SCREENING/SAMPLING PROCEDURE 17

Section 6.2.1 General Procedure *17*

Section 6.2.2 Field Equipment *18*

Section 6.2.3 Sample Collection and Analysis *19*

SECTION 6.3 INTERPRETING OUTFALL SAMPLING RESULTS 2

SECTION 6.4 WORK COMPLETED TO DATE 3
SECTION 6.5 FOLLOW-UP RANKING OF OUTFALLS AND INTERCONNECTIONS 3
SECTION 7 CATCHMENT INVESTIGATIONS 4
SECTION 7.1 SYSTEM VULNERABILITY FACTORS 4
SECTION 7.2 DRY WEATHER MANHOLE INSPECTIONS 5
SECTION 7.3 WET WEATHER OUTFALL SAMPLING 7
SECTION 7.4 SOURCE ISOLATION AND CONFIRMATION 7
Section 7.4.1 Sandbagging 8
Section 7.4.2 Smoke Testing 8
Section 7.4.3 Dye Testing 8
Section 7.4.4 CCTV/Video Inspection 9
Section 7.4.5 Optical Brightener Monitoring 9
Section 7.4.6 IDDE Canines 9
SECTION 7.5 ILLICIT DISCHARGE REMOVAL 10
Section 7.5.1 Confirmatory Outfall Screening 10
SECTION 7.6 ONGOING SCREENING 10
SECTION 8 TRAINING 11
SECTION 9 PROGRESS REPORTING 11

LIST OF TABLES

Table 1-1 Impaired Waters 3
Table 1-2 IDDE Program Implementation Timeline 5
Table 3-1 Summary of Mapped MS4 Structures 9
Table 4-1 SSO Inventory 12
Table 6-1 Field Equipment – Dry Weather Outfall Screening and Sampling 17
Table 6-2 Field Screening Parameters and Analysis Methods 19
Table 6-3 Required Analytical Methods, Detection Limits, Hold Times, and Preservatives 19
Table 6-4 Benchmark Field Measurements for Select Parameters 21

LIST OF FIGURES

Figure 1-1 IDDE Investigation Procedure Framework 4

LIST OF APPENDICIES

Appendix A – Legal Authority (IDDE By-law or Ordinance)
Appendix B – Stormwater System Mapping
Appendix C – Catchment Delineation Ranking Matrix
Appendix D – Field Forms and Hyperlinks to Laboratories and Field Services Companies
Appendix E – IDDE investigation Results
    Dry Weather Outfall Sampling Memo – Year 2
    Dry Weather Outfall Sampling Memo – Year 3
Appendix F – System Vulnerability Factor (SVF) Inventory
Appendix G – New England Interstate Water Pollution Control Commission IDDE Manual

SECTION 1 INTRODUCTION

SECTION 1.1 MS4 PROGRAM

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed for The Town of Rockland 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 and 2020 Permit Modifications require that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

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

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

SECTION 1.2 ILLICIT DISCHARGES

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

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

Some illicit discharges are intentional, such as dumping used oil (or other pollutant) into catch basins, a resident or contractor illegally tapping a new sewer lateral into a storm drain pipe to avoid the costs of a sewer connection fee and service, and illegal dumping of yard wastes into surface waters.

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

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

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

SECTION 1.3 ALLOWABLE NON-STORMWATER DISCHARGES

The following categories of non-stormwater discharges are allowed under the MS4 Permit unless the permittee, 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 detergents

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

SECTION 1.4 RECEIVING WATERS AND IMPAIRMENTS

Table 1-1 lists the "impaired waters" within the boundaries of Rockland's MS4 regulated area. Impaired waters are water bodies that do not meet water quality standards for one or more designated use(s), such as recreation or aquatic habitat. The inventory is based on the Massachusetts 2022 Integrated List of Waters published by MassDEP in May 2022 and updated every two years. The first draft of this IDDE Plan, published in 2019, and the Town's Notice of Intent (NOI), published in 2018, used the previous Massachusetts 2014 Integrated List of Waters. There were some changes between the 2014 and 2022 Integrated Lists of Waters. In this period, MassDEP categorized Old Swamp River and French Stream as being impaired for E. coli, in addition to the impairments listed in the 2014 Integrated List of Waters. Also, Cushing Brook is now categorized as being impaired for E. coli; in the 2014 Integrated List of Waters, Cushing Brook was categorized as having no impairments. As of this year, MassDEP has recategorized Old Swamp River as a category 4a instead of a category 5 due to the additional fish passage barrier impairment.

Table 1-1 Impaired Waters Rockland, Massachusetts

Water Body Name	Segment ID	Category	Impairment(s)	Associated Approved TMDL
Old Swamp River	MA74-03	4a	• (Fish Passage Barrier*) • Escherichia Coli (E. Coli) • Fecal Coliform	
Cushing Brook	MA94-40	5	• Escherichia Coli (E. Coli)	
French Stream	MA94-03	5	• Dissolved Oxygen • Fecal Coliform • Escherichia Coli (E. Coli) • Fishes Bioassessments • Phosphorus, Total	E. Coli and Fecal Coliform TMDL No. 61718
Studleys Pond	MA94151	5	• Fecal Coliform	

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 USEPA as of the date of issuance of the Massachusetts 2022 List of Integrated Waters (May 2023).

These impairments require additional sampling in accordance with Appendix G of the MS4 Permit. The Town must sample for E. coli and fecal coliform at outfalls discharging to the Old Swamp River.

E. coli at outfalls discharging to Cushing Brook; and E. coli, fecal coliform, dissolved oxygen, total phosphorus, and biological oxygen demand at outfalls discharging French Stream. Due to the South Coastal Watershed and Boston Harbor Weymouth-Weir Watershed's TMDLs for pathogens, all outfalls must be sampled for E. coli and fecal coliform.

In order to comply with the 2016 MS4 Permit Appendix H Parts II and III, the Town of Rockland implemented the illicit discharge program. Outfalls draining to French Stream (impaired for phosphorus (Part II)) and outfalls draining to Old Swamp River, Cushing Brook, French Stream, and Studleys Pond (impaired for fecal coliform (Part III)) were designated High Priority Catchments 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

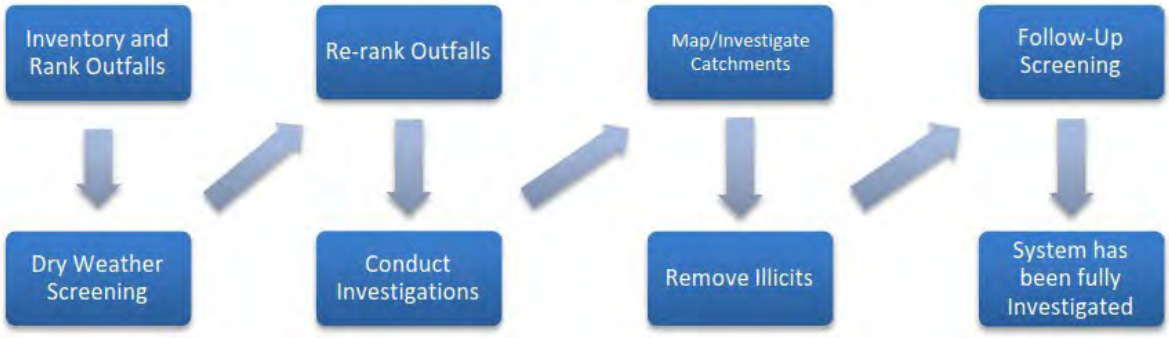


Table 1-2 IDDE Program Implementation Timeline

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 TO DATE UNDER THE 2003 MS4 PERMIT

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

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

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

In addition to the 2003 MS4 Permit requirements, other IDDE-related activities that have been completed include:

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

SECTION 2 AUTHORITY AND STATEMENT OF IDDE RESPONSIBILITIES

SECTION 2.1 LEGAL AUTHORITY

The Town of Rockland has adopted a Stormwater Management Bylaw (May 7, 2018), Chapter 338 of the Town Bylaws. A copy of the Stormwater Management Bylaw is provided in **Appendix A**. The Bylaw provides the Town of Rockland with 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 Rockland has reviewed its current Stormwater Management Bylaw 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 Highway and Sewer Departments are the lead municipal agencies/departments responsible for implementing the IDDE program pursuant to the provisions of the Illicit Discharges to Storm Drainage System.

- Highway Department – David Taylor
- Sewer Department – Robyn Day

Other agencies or departments with responsibility for aspects of the program include:

- Building Department – Thomas Ruble
- Board of Health – Delshaune Flipp
- Conservation Commission – Douglas A. Golemme
- Planning Board – Mike Corbett
- Board of Selectmen – Larry J. Ryan
- Town Administrator – Douglas Lapp

SECTION 3 STORMWATER SYSTEM MAPPING

The Town of Rockland 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 Rockland 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 USEPA 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 Rockland has completed the following updates to its stormwater mapping to meet the Phase I requirements:

- Outfalls and receiving waters
- Municipally owned stormwater treatment structures (also known as stormwater best management practices (BMPs).
- 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. Due to limited information and usage of new software to produce catchment delineations, we have not attached an updated catchment delineation from FY23. Attached as **Appendix C** is a catchment delineation figure from 2021, and the most up to date master outfall ranking table from 2023.

The Town of Rockland is in the process of updating its stormwater mapping to include the remaining Phase I information:

- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems

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

Table 3-1 Summary of Mapped MS4 Structures

Structure Type	Number of Structures
Catch Basins	1,843
Drain Manholes	409
Inlets	7
Outfalls	67
Outlets	20
Scupper	7
Stormwater BMPs	12
Swales	5

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 Rockland 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
- Municipal sanitary sewer system (mapping is ongoing)
- Municipal combined sewer system (not applicable)

The Town of Rockland will update its stormwater mapping by July 1, 2028 to include the remaining Phase II information.

SECTION 3.3 ADDITIONAL RECOMMENDED MAPPING ELEMENTS

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

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

SECTION 4 SANITARY SEWER OVERFLOWS (SSOS)

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

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

Upon detection of an SSO, the Town of Rockland 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 Rockland 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** will be updated by the Highway Department when new SSOs are detected. The SSO inventory will be included in the annual report, including the status of mitigation and corrective measures to address each identified SSO.

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

SSO Location[1]	Discharge Statement[2]	Date[3]	Time Start[3]	Time End[3]	Estimated Volume[4]	Description[5]	Mitigation Completed[6]	Mitigation Planned[7]
French's Stream	Discharge through Wastewater Outfall	1/26/2023-1/27/2023	9:00AM	12:00AM	<100,000 gallons	The discharge or overflow consists or likely consists of untreated or partially treated sewage and waste.	Yes	Yes
French's Stream	Discharge through Wastewater Outfall	3/15/2023-3/17/2023	7:30AM	12:00AM	1,812,515 gallons	The sanitary sewer discharge or overflow at the Rockland Wastewater Treatment Plant. The discharge or overflow consists or likely consists of untreated or partially treated sewage and waste.	Yes	Yes
French's Stream	Discharge through Wastewater Outfall	3/14/2023	7:30AM	12:00AM	1,812,515 gallons	a sanitary sewer discharge or overflow at the Rockland Wastewater Treatment Plant. The discharge or overflow consists or likely consists of untreated or partially treated sewage and waste	Yes	Yes

No SSOs have been reported

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

SECTION 5 ASSESSMENT AND PRIORITY RANKING OF OUTFALLS

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

SECTION 5.1 OUTFALL CATCHMENT DELINEATIONS

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

SECTION 5.2 OUTFALL AND INTERCONNECTION INVENTORY AND INITIAL RANKING

The Highway Department has 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.

The Town has updated the initial outfall priority ranking matrix based on screening and sampling completed since the initial ranking was developed in 2019. The screening results and updates to the ranking table are discussed further in **Section 6.4** and **Section 6.5**. The updated outfall priority ranking matrix and catchment delineation mapping is included in **Appendix C**.

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, Rockland has identified zero (0) Problem Outfalls

2. **High Priority Outfalls**: Outfalls/interconnections that have not been classified as Problem Outfalls and that are:
   - Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
   - Determined by the permittee as high priority based on the characteristics listed below or other available information

To date, Rockland has identified *20 High Priority Outfalls*

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

To date, Rockland has identified *47 Low Priority Outfalls*

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

To date, Rockland has identified *zero (0) Excluded Outfalls*

Outfalls are ranked into the above priority categories (except for excluded outfalls, which are excluded from the IDDE program) based on the following characteristics of the defined initial catchment areas, where information is available. Additional relevant characteristics, including location-specific characteristics, may be considered but must be documented in this IDDE Plan. The initial ranking was based upon response provided by the Town of Rockland in May 2019 and has been updated in 2021. The characteristics include:

- **Previous screening results** – Previous screening/sampling results indicate likely sewer input (see criteria above for Problem Outfalls).
  - 92 outfalls screened in 2018
  - 62 outfalls screened in 2020
  - 74 outfalls screened in 2021
  - The Town has screened all outfalls and none have exhibited sewer input in 2022
- **Past discharge complaints and reports**
  - No complaints provided.
- **Poor receiving water quality** – The following guidelines are recommended to identify waters as having a high illicit discharge potential:
  - Exceeding water quality standards for bacteria,
  - Ammonia levels above 0.5 mg/L, or
  - Surfactants levels greater than or equal to 0.25 mg/L.

- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
    - Gas stations, car washes, garden centers, car dealerships, and/or industrial areas were found within catchments: A, B, C, D, J, K, L, M, Q, S, T, V, Y, AB.
- **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.
    - Non-PVC sewer pipes considered more than 40 years old. Catchments A, B, C, D, E, G, K, L, M, N, P, Q, R, S, T, Y, and Z have non-PVC sewer pipes.
- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems, but have since been converted to sewer connections may have a high illicit discharge potential.
    - No sewer conversion data available.
- **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.
    - No combined sewer systems.
- **Surrounding density of aging septic systems** – Septic systems 30 years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.
    - Aging septic systems were identified in catchments with “year built” data older than 30 years ago in the Level 3 parcel data.
- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
    - No culverted stream data available.
- **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**.
    - If a receiving waterbody for an outfall is considered impaired, the outfall rank is prioritized as high in the Catchment Ranking Table

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 Old Swamp River, Cushing Brook, French Stream, and Studleys Pond.

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, or hired representatives, are responsible for conducting dry weather outfall screening, starting with High Priority outfalls, followed by Low Priority outfalls, based on the initial priority rankings described in the previous section.

SECTION 6.1 WEATHER CONDITIONS

Dry weather outfall screening and sampling may occur when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snowmelt is occurring. For purposes of determining dry weather conditions, program staff can precipitation data from the Rockland Fire HQ Station (Station ID KMAROCKL6). If the Rockland Fire HQ Station is not available or not reporting current weather data, then the Rockland Station (Station ID KMAROCKL8) 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

Equipment	Use/Notes
Sandbags	For damming low flows in order to take samples
Small Mallet or Hammer	Helping to free stuck manhole and catch basin covers
Utility Knife	Multiple uses
Measuring Tape	Measuring distances and depth of flow
Safety Cones	Safety
Hand Sanitizer	Disinfectant/decontaminant
Zip Ties/Duct Tape	For making field repairs
Rubber Boots/Waders	For accessing shallow streams/areas
Sampling Pole/Dipper/Sampling Cage	For accessing hard to reach outfalls and manholes

Section 6.2.3 Sample Collection and Analysis

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

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

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

Field test kits or field instrumentation are permitted for all parameters except indicator bacteria and any pollutants of concern. Field kits need to have appropriate detection limits and ranges. **Table 6-2** lists various field test kits and field instruments that can be used for outfall sampling associated with the 2016 MS4 Permit parameters, other than indicator bacteria and any pollutants of concern.

Table 6-2 Field Screening Parameters and Analysis Methods

Analyte or Parameter	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	CHEMetrics™ V-2000 Colorimeter Hach™ DR/890 Colorimeter Hach™ Pocket Colorimeter™ II	CHEMetrics™ K-1410 CHEMetrics™ K-1510 (series) Hach™ NI-SA Hach™ Ammonia Test Strips
Surfactants (Detergents)	CHEMetrics™ I-2017	CHEMetrics™ K-9400 and K-9404 Hach™ DE-2
Chlorine	CHEMetrics™ V-2000, K-2513 Hach™ Pocket Colorimeter™ II	NA
Conductivity	CHEMetrics™ I-1200 YSI Pro30 YSI EC300A Oakton 450	NA
Temperature	YSI Pro30 YSI EC300A Oakton 450	NA
Salinity	YSI Pro30 YSI EC300A Oakton 450	NA
Dissolved Oxygen	YSI Pro30 YSI EC300A Oakton 450	NA
Turbidity	Hach™ 2100Q Portable Turbidimeter Oakton CON 150	NA

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

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

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

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Ammonia	EPA: 350.2 SM: 4500-NH3C	0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2, No preservative required if analyzed immediately
Surfactants	SM: 5540-C	0.01 mg/L	48 hours	Cool ≤6°C
Chlorine	SM: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required
Temperature	SM: 2550B	*NA*	Immediate	None Required
Specific Conductance	EPA: 120.1 SM: 2510B	0.2 µs/cm	28 days	Cool ≤6°C
Salinity	SM: 2520	-	28 days	Cool ≤6°C
Biochemical Oxygen Demand (BOD)	EPA: 360.1	EPA: 3 mg/L	48 hours	Cool ≤6°C
Dissolved Oxygen	EPA: 365.1	EPA: 1 mg/L	Immediate	Cool ≤6°C
Turbidity	EPA: 160.2	EPA: 1 NTU	48 hours	Cool ≤6°C
Indicator Bacteria: *E.coli* *Enterococcus* *Fecal Coliform*	*E.coli* EPA: 1603 SM: 9221B, 9221F, 9223 B Other: Colilert ®, Colilert-18® *Enterococcus* EPA: 1600 SM: 9230 C Other: Enterolert® *Fecal Coliform* EPA: 1680	*E.coli* EPA: 1 cfu/100mL SM: 2 MPN/100mL Other: 1 MPN/100mL *Enterococcus* EPA: 1 cfu/100mL SM: 1 MPN/100mL Other: 1 MPN/100mL *Fecal Coliform* EPA: 1 ctu	8 hours	Cool ≤10°C, 0.0008% $Na_2S_2O_3$
Total Phosphorus	EPA: Manual-365.3, Automated Ascorbic acid digestion-365.1 Rev. 2, ICP/AES4-200.7 Rev. 4.4 SM: 4500-P E-F	EPA: 0.01 mg/L SM : 0.01 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2
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 WORK COMPLETED TO DATE

The Town's outfall inventory contained 130 outfalls when the NOI was submitted in 2018. Town field staff, or hired representatives, screened many outfalls as part of the 2003 MS4 Permit, and since the start of the new 2016 MS4 Permit, the Town has completed dry weather screening of the remaining outfalls. Screenings were completed over the course of two days in May 2020 and two days in March 2021. During screening, field staff observed that 59 outfalls were dry and 11 were flowing during dry weather. Based on field observations, the Town removed an additional 60 previously identified outfall structures from the Town's outfall inventory because the structures were identified as BMP inlet/outlets, culvert inlet/outlets, private outfalls, or removed for a different reason. During the 2023 field investigations, 2 outfalls were identified as being culverted streams and were removed from the outfall inventory, thus bringing the total to 68 outfalls. Screening and sampling results are attached in **Appendix E**.

SECTION 6.5 FOLLOW-UP RANKING OF OUTFALLS AND INTERCONNECTIONS

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

The Town updated and re-prioritized the initial outfall and interconnection rankings based on information gathered during dry weather screening over the first three (3) years of the permit term (June 30, 2021). Based on field screening conducted in 2019, 2020, and 2021, and 2023 62 outfalls were determined to be structures other than MS4 outfalls and removed from the ranking. 15 outfalls were classified as problem outfalls in the original ranking table and have been re-classified as high priority outfalls in the ranking table update. Sampling results that triggered the problem outfall status were re-examined and determined to not meet the criteria for problem outfalls as defined in the 2016 MS4 Permit Section 2.3.4.7.a.ii. Three (3) outfalls were elevated from a low priority to a high priority outfall. Some of these structures had levels of ammonia or pH outside allowable ranges during dry weather sampling, which triggered the high priority ranking. Also, outfalls were elevated to a high priority if they discharge to Cushing Brook. Cushing Brook was re-classified as Category 5 from Category 3 in the updated 2016 Integrated List of Waters. The updated ranking table is attached as **Appendix C.**

SECTION 7 CATCHMENT INVESTIGATIONS

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to trace the source of the potential discharge within the outfall catchment area.

Catchment investigation techniques include, but are not limited to, review of maps, historic plans, and records; manhole observation; dry and wet weather sampling; video inspection; smoke testing; and dye testing. This section outlines a systematic procedure to investigate outfall catchments to trace the source of potential illicit discharges. All data collected as part of the catchment investigations is recorded and reported in each annual report.

SECTION 7.1 SYSTEM VULNERABILITY FACTORS

The Highway Department is in the process of reviewing relevant mapping and historic plans and records to identify areas within the catchments with higher potential for illicit connections. The following information has been collected:

- 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 and will continue to be filled out for each catchment as SVFs are identified. The SVF inventory will be included in each annual report. An SVF analysis was unable to be conducted for the catchments visited in 2023 investigations, and no SVFs were able to be identified for any catchments due to limited information from the town of Rockland. For this reason, there is no SVF Assessment attachment.

SECTION 7.2 DRY WEATHER MANHOLE INSPECTIONS

The Town of Rockland 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 7.5. 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 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 sandbags/barriers, the upstream pipe network can be ruled out as a source of the intermittent discharge. Finding appropriate durations of dry weather and the need for multiple trips to each manhole makes this method both time-consuming and somewhat limiting.

Section 7.4.2 Smoke Testing

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

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

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

Section 7.4.3 Dye Testing

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

A team of two or more people is needed to perform dye testing (ideally, all with two-way radios). One person is inside the building, while the others are stationed at the appropriate storm sewer and

sanitary sewer manholes (which should be opened) and/or outfalls. The person inside the building adds dye into a plumbing fixture (e.g., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The person inside the building then radios to the outside crew that the dye has been dropped, and the outside crew watches for the dye in the storm sewer and sanitary sewer, recording the presence or absence of the dye.

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

Section 7.4.4 CCTV/Video Inspection

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

Section 7.4.5 Optical Brightener Monitoring

Optical brighteners are fluorescent dyes that are used in detergents and paper products to enhance their appearance. The presence of optical brighteners in surface waters or dry weather discharges suggests there is a possible illicit discharge or insufficient removal through adsorption in nearby septic systems or wastewater treatment. Optical brightener monitoring can be done in two ways.

The most common, and least expensive, methodology involves placing a cotton pad in a wire cage and securing it in a pipe, manhole, catch basin, or inlet to capture intermittent dry weather flows. The pad is retrieved at a later date and placed under UV light to determine the presence/absence of brighteners during the monitoring period. A second methodology uses handheld fluorometers to detect optical brighteners in water sample collected from outfalls or ambient surface waters. Use of a fluorometer, while more quantitative, is typically more costly and is not as effective at isolating intermittent discharges as other source isolation techniques.

Section 7.4.6 IDDE Canines

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

SECTION 7.5 ILLICIT DISCHARGE REMOVAL

When the specific source of an illicit discharge is identified, the Town of Rockland will exercise its authority as necessary to require its removal. The annual report will include the status of IDDE investigation and removal activities including the following information for each confirmed source:

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

Section 7.5.1 Confirmatory Outfall Screening

Within one (1) year of removal of all identified illicit discharges within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation.

SECTION 7.6 ONGOING SCREENING

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be re-prioritized for screening and scheduled for ongoing screening once every five (5) years. Ongoing screening will consist of dry weather screening and sampling consistent with the procedures described in Section 6 of this plan. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors and will be conducted in accordance with the procedures described in **Section 7.1**. 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. The frequency and type of training is included in the annual report.

SECTION 9 PROGRESS REPORTING

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

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

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

APPENDIX A
Legal Authority (IDDE By-law or Ordinance)

Table of Contents

ARTICLE I – GENERAL PROVISIONS

Section 1. Purpose and Objective
Section 2. Definitions
Section 3. Authority
Section 4. Responsibility for administration
Section 5. Waiver
Section 6. Regulation
Section 7. Severability

ARTICLE II – DISCHARGES TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM AND TO WATERCOURSES OR WATERS OF THE COMMONWEALTH

Section 1. Applicability
Section 2. Prohibited activities; exemptions.
Section 3. Additional Prohibited Pollutants
Section 4. Emergency suspension of storm drainage system access.
Section 5. Notification of spills
Section 6. Enforcement
Section 7. Transitional provisions

ARTICLE III STORMWATER MANAGEMENT AND LAND DISTURBANCE

Section 1. Applicability
Section 2. Approval and/or Permit
Section 3. Entry
Section 4. Inspection and Site Supervision
Section 5 Compliance with the provisions of the United States Environmental Protection Agency's (EPAs) General Permit for Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts
Section 6. Surety
Section 7. Final Reports
Section 8. Enforcement

ARTICLE I – GENERAL PROVISIONS

Section 1. Purpose and Objective

A. The purpose of this bylaw is to protect the health, safety, general welfare, and environment by regulating illicit connections and discharges to the storm drain system or, directly or indirectly, to a watercourse or into the waters of the Commonwealth, as well as to control the adverse effects of construction site stormwater runoff and post-construction runoff. Stormwater runoff is potentially a major cause of:

(1) Impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands, groundwater and drinking water supplies;
(2) Contamination of drinking water supplies;
(3) Contamination of downstream coastal areas;
(4) Alteration or destruction of aquatic and wildlife habitat;
(5) Overloading or clogging of municipal stormwater management systems; and
(6) Flooding.

B. The objectives of this bylaw are:

(1) Protect water resources;
(2) Comply with state and federal statutes and regulations relating to stormwater discharges including total maximum daily load requirements;
(3) To prevent pollutants from entering the Town's municipal separate storm sewer system (MS4) and reduce or eliminate pollutants entering the Towns MS4 from existing uses;
(4) To prohibit illicit connections and unauthorized discharges to the MS4 and require their removal;
(5) To establish minimum construction and post construction stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;
(6) To establish provisions for the long-term responsibility for, and maintenance of, structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed are maintained, and pose not treat to public safety; and
(7) To establish the Town of Rockland's legal authority to ensure compliance with the provisions of this bylaw through inspection, monitoring, and enforcement.

Section 2. Definitions

Unless a different definition is indicated in other sections of this bylaw, the following definitions and provisions shall apply throughout this bylaw:

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

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

ALTERATION OF DRAINAGE CHARACTERISTICS: Any activity on an area of land that

changes the water quality, force, direction, timing or location of runoff flowing from the area. Such changes include: change from distributed runoff to confined, discrete discharge, change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area.

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

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

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

CLEARING: Any activity that removes the vegetative surface cover

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

DISCHARGE OF POLLUTANTS: The addition from any source of any pollutant or combination of pollutants into the municipal storm drain system or into the waters of the United States or commonwealth from any source.

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

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

EROSION CONTROL: The prevention or reduction of the movement of soil particles or rock fragments due to stormwater runoff.

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

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

GRADING: Changing the level or shape of the ground surface.

GROUNDWATER: Water beneath the surface of the ground.

GRUBBING: The act of clearing land surface by digging up roots and stumps.

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

ILLICIT DISCHARGE - Direct or indirect discharge to the municipal storm drain system or into a watercourse or the waters of the Commonwealth that is not composed entirely of

stormwater, except as exempted in s. X. The term does not include a discharge in compliance with an NPDES stormwater discharge permit or resulting from fire-fighting activities exempted pursuant to § X of this bylaw.

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

IMPOUNDMENT: A stormwater pond created by either constructing an embankment or excavating a pit which retains a permanent pool of water.

INFILTRATION: The act of conveying surface water into the ground to permit groundwater recharge and the reduction of stormwater runoff from a project site.

LAND-DISTURBING ACTIVITY: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material***;*** results in an increased amount of runoff or pollutants; measurably changes the ability of a ground surface to absorb waters, involves clearing and grading, or results in an alteration of drainage characteristics.

LOAD ALLOCATION – The maximum concentration or mass of a pollutant which can be discharged to a waterway non-point sources without causing a violation of surface water quality standards as established in an applicable TMDL.

MASSACHUSETTS ENDANGERED SPECIES ACT: (G.L. c. 131A) and its implementing regulations at (321 CMR 10.00) which prohibit the "taking" of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS: The Stormwater Standards as further defined by the Massachusetts Stormwater Handbook both issued by the Department of Environmental Protection, and as amended, that coordinate the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 §. 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Standards address stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

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

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGE PERMIT - A permit issued by United States Environmental Protection Agency or jointly with the Commonwealth of Massachusetts that authorizes the discharge of pollutants to waters of the United States.

NONSTORMWATER DISCHARGE - Discharge to the municipal storm drain system not composed entirely of stormwater.

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

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

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

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

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

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

PRE-CONSTRUCTION: All activity in preparation for construction.

POLLUTANT - Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter, whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the commonwealth. Pollutants shall include without limitation:

A. Paints, varnishes, and solvents;
B. Oil and other automotive fluids;
C. Nonhazardous liquid and solid wastes and yard wastes;
D. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnance, accumulations and floatables;
E. Pesticides, herbicides, and fertilizers;
F. Hazardous materials and wastes; sewage, fecal coliform and pathogens;
G. Dissolved and particulate metals;
H. Animal wastes;
I. Rock; sand; salt; soils;
J. Construction wastes and residues; and
K. Noxious or offensive matter of any kind.

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

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

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

REDEVELOPMENT: Development, rehabilitation, expansion, demolition or phased projects that disturb the ground surface, including impervious surfaces, on previously developed sites. The creation of new areas of impervious surface or new areas of land disturbance on a site constitutes development, not redevelopment, even where such activities are part of a common plan which also involves redevelopment. Redevelopment includes maintenance and improvement of existing roadways including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems and repaving; and remedial projects specifically designed to provide improved stormwater management such as projects to separate storm drains and sanitary sewers and stormwater retrofit projects.

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

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

SEDIMENTATION: The process or act of deposition of sediment.

SITE: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

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

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

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

STORMWATER AUTHORITY – Town of Rocklands Board of Selectman or its authorized agent(s).

STORMWATER - Runoff from precipitation or snow melt and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan required as part of the application for a Stormwater Management Permit.

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

TOTAL MAXIMIM DAILY LOAD or TMDL – A plan required under the Clean Water Act for a pollutant which causes or contributes to a violation of state surface water quality standards in a specific geographic area, and which establishes the maximum amount of that pollutant (referred to as the load allocation and waste load allocation) which may be discharged to the affected waters of the Commonwealth by one or more categories of users without violating state surface water quality standards.

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

substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as "toxic" or "hazardous" under MGL c. 21C and c. 21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

TSS: Total Suspended Solids**.**

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

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

WASTE LOAD ALLOCATION – The maximum concentration or mass of a pollutant which can be discharged to a waterway from point sources without causing a violation of surface water quality standards as established in an applicable TMDL.

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

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

WETLAND RESOURCE AREA: Areas specified in the Massachusetts Wetlands Protection Act G.L. c. 131, § 40 and in the Town of Rockland Wetlands Protection Bylaw.

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

Section 3. Authority

This bylaw is adopted under authority granted by the Home Rule Amendment of the Massachusetts Constitution, the home rule statutes, the regulations of the Federal Clean Water Act found at 40 CFR 122.34, Chapter 1, § 1-2 of the General Bylaws of the Town of Rockland.

Section 4. Responsibility for administration

A. Stormwater Authority shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon Stormwater Authority may be delegated in writing by Stormwater Authority to its employees or agents.

Section 5. Waivers

A. Following a public hearing on a waiver request, the Stormwater Authority may waive strict compliance with any requirement of this bylaw or the rules and regulations promulgated hereunder, where:

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

(2) is in the public interest; and

(3) is not inconsistent with the purpose and intent of this bylaw.

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

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

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

Section 6. Regulations

The Stormwater Authority may adopt, and periodically amend, regulations, rules and/or written guidance relating to the terms, conditions, definitions, enforcement, fees, procedures and administration of this Stormwater Bylaw by majority vote after conducting a public hearing to receive comments. Such hearing shall be advertised in a newspaper of general local circulation, at least fourteen (14) days prior to the hearing date. Failure of the Stormwater Authority to issue such rules, or regulations, or a legal declaration of their invalidity by a court, shall not act to suspend or invalidate the effect of this Bylaw.

Such regulations, rules or guidance may include without limitation, provisions for the establishment of one or more categories of administrative review approvals for specific types or sizes of projects. Administrative review applications that meet all the standard requirements may be issued by one or more agents designated in writing by the Stormwater Authority, without the requirement for a public hearing as detailed in Article III of this bylaw. Administrative review approval shall comply with all other provisions of this Bylaw.

Section 7. Severability

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

ARTICLE II – DISCHARGES TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM AND TO WATERCOURSES OR WATERS OF THE COMMONWEALTH

Section 1. Applicability

Article II of this bylaw shall apply to all water entering the municipally owned storm drainage system or going, directly or indirectly, into a watercourse or waters of the Commonwealth, that will be generated on any developed or undeveloped lands except as explicitly exempted in this bylaw or where the Stormwater Authority has issued a waiver in accordance with Article I Section 5.

Section 2. Prohibited activities; exemptions.

A. Illicit discharges. No person shall dump, discharge, spill, cause or allow to be discharged any pollutant or nonstormwater discharge into the municipal separate storm sewer system (MS4), onto an impervious surface directly connected to the MS4, or directly or indirectly, into a watercourse or waters of the Commonwealth.

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

C. Obstruction of municipal storm drain system. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drain system without prior consent from the Stormwater Authority.

D. Exemptions.

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

(2) The following non-stormwater discharges or flows are exempt from the prohibitions of non-stormnwater provided that the source is not a significant contributor of a pollutant to the municipal storm drain system or, directly or indirectly, to a watercourse or waters of the Commonwealth:

(a) Waterline flushing;

(b) Flow from potable water sources, with the exception of landscape irrigation and lawn watering;

(c) Springs;

(d) Natural flow from riparian habitats and wetlands;

(e) Diverted stream flow;

(f) Rising groundwater;

(g) Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater (e.g. sump pump), provided that where a pump intake exists inside a structure, the operator seeks a permit from the Stormwater Authority prior to discharge and thereafter discharges in accordance with the requirements of the permit and applicable laws and regulations to be issued by the Commission;

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

(i) Discharge from dechlorinated swimming pool water (less than one ppm chlorine) provided the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;

(j) Discharge from street sweeping;

(k) Dye testing, provided verbal notification is given to the Stormwater Authority prior to the time of the test;

(l) Nonstormwater discharge permitted under an NPDES permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and

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

Section 3. Additional Prohibited Pollutants

A. Pet Waste: Rockland is subject to a Bacteria TMDL, and because dog feces are a major component of stormwater pollution, it shall be the duty of each person who owns, possesses, or controls a dog to remove and properly dispose of any feces left by the dog on any public or private property neither owned nor occupied by said person. It is prohibited to dispose of dog feces in any public or private storm drain, catch basin, wetland or water body or on any paved or impervious surface. However, this provision shall not be applicable to a person using a helping dog or other helping animal registered as such. Persons walking dogs must carry with them a device designed to dispose of dog feces including, but not limited to, a plastic bag or "pooper scooper." For specific requirements and penalties for violations see General Bylaw Chapter 184 Animals**.**

B. Pavement Sealers: Coal tar based driveway and pavement sealers have been identified as a primary source of poly-aromatic hydrocarbons affecting streams in developed areas. Poly-aromatic hydrocarbons are classified by the US Environmental Protection Agency as a probable human carcinogen and are highly toxic to aquatic life. Asphalt-based driveway and pavement sealers contain low concentrations of poly-aromatic hydrocarbons. Therefore, application of coal tar based driveway and pavement sealers is prohibited for all paved areas directly connected to the MS4.

Section 4. Emergency suspension of storm drainage system access

The Stormwater Authority may suspend municipal storm drain system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened discharge of pollutants that presents imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency

suspension order, the Stormwater Authority may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

Section 5. Notification of spills

Notwithstanding other requirements of local, state or federal law, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of pollutants to the municipal drainage system or waters of the Commonwealth, the person shall take all necessary steps to ensure containment and cleanup of the release. In the event of a release of oil or hazardous materials, the person shall immediately notify the Municipal Fire and Police Departments. In the event of a release of nonhazardous material, the reporting person shall notify the authorized enforcement agency no later than the next business day. The reporting person shall provide to the Stormwater Authority written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

Section 6. Enforcement

The Stormwater Authority or its authorized agent shall enforce this bylaw, and any associated regulations, orders, violation notices, and enforcement orders and may pursue all civil and criminal remedies for such violations.

A. Civil relief. If a person violates the provisions of this bylaw, or any associated regulations, permit, notice, or order issued thereunder, the Stormwater Authority may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

B. Orders.

(1) The Stormwater Authority or its authorized agent may issue a written order to enforce the provisions of this bylaw or any regulations thereunder, which may include:

(a) Elimination of illicit connections or discharges to the MS4;

(b) Elimination of discharges to the MS4 or, directly or indirectly, into a watercourse or into the waters of the Commonwealth.

(c) Performance of monitoring, analyses, and reporting;

(d) That unlawful discharges, practices, or operations shall cease and desist;

(e) That measures shall be taken to minimize the discharge of pollutants until such time as the illicit connection shall be eliminated; and

(f) Remediation of contamination in connection therewith.

(2) If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that,

should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town may, at its option, undertake such work, and expenses thereof shall be charged to the violator.

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

C. Criminal penalty. Any person who violates any provision of this bylaw, regulation, order or permit issued thereunder shall be punished by a fine of not more than $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

D. Noncriminal disposition. As an alternative to criminal prosecution or civil action, the Town may elect to utilize the noncriminal disposition procedure set forth in MGL c. 40, § 21D and § 1-6 of the Town of Rockland General Bylaws, in which case the agent of the Stormwater Authority shall be the enforcing person. The penalty for the first violation shall be a warning. The penalty for the second violation shall be $100. The penalty for the third and subsequent violations shall be $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

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

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

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

Section 7. Transitional provisions

Residential property owners shall have 60 days from the effective date of this bylaw to comply with its provisions provided good cause is shown for the failure to comply with the bylaw during that period.

ARTICLE III – STORMWATER MANAGEMENT AND LAND DISTURBANCE

Section 1. Applicability

No person may undertake a construction activity or land disturbance, including clearing, grading, excavation or redevelopment that will disturb equal to or greater than thresholds outlined in the Town of Rockland Stormwater Regulations (Regulations) without a written approval or a permit from the Stormwater Authority or as otherwise provided in this bylaw.

Any person that fails to follow the requirements of a Stormwater Management Permit and the related Erosion and Sedimentation Control Plan, and Operations and Maintenance Plan issued under the Stormwater Management Regulations shall be in violation of the Town of Rockland Bylaws.

Section 2. Approval and/or Permit

An applicant seeking an approval and/or permit shall file an appropriate application with the Stormwater Authority in a form and containing information as specified in this bylaw and in regulations adopted by the Stormwater Authority. Approval or permit must be obtained prior to the commencement of land disturbing or redevelopment activity based on thresholds described in the Stormwater Regulations.

Section 3. Entry

Filing an application for an approval or permit grants the Stormwater Authority and its employees or agent's permission to enter the site to verify the information in the application and to inspect for compliance with approval or permit conditions.

Section 4. Inspection and Site Supervision

The Stormwater Authority or its designated agent shall make inspections as outlined in the Regulations to verify and document compliance the Stormwater Management Permit.

Section 5. Compliance with the provisions of EPAs General Permit for MS4s in Massachusetts

This Bylaw shall be implemented in accordance with the requirements of EPAs most recent General Permit for MS4s in Massachusetts relating to illicit connections and discharges, construction site runoff, and post-construction stormwater management. The Stormwater Authority shall include these requirements in any Regulations that it issues. The Stormwater Authority may establish additional requirements by Regulation to the further the purposes and objectives of this Bylaw so long as they are not less stringent than those in the MS4 General Permit for Massachusetts.

Section 6. Surety

The Stormwater Authority may require the applicant to post before the start of land disturbance or construction activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by the Stormwater Authority and be in an amount deemed sufficient by the Stormwater Authority to ensure that the work will be completed

in accordance with the permit. If the project is phased, the Stormwater Authority may release part of the bond as each phase is completed in compliance with the permit.

Section 7. Final Reports

Upon completion of the work, the applicant shall submit a report (including certified as-built construction plans) from a Professional Engineer (P.E.), surveyor, or Certified Professional in Erosion and Sedimentation Control (CPESC), certifying that all erosion and sedimentation control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved Erosion and Sediment Control Plan and Stormwater Management plan. Any discrepancies shall be noted in the cover letter.

Section 8. Enforcement

The Stormwater Authority or its authorized agent shall enforce this bylaw, and any associated regulations, orders, violation notices, and enforcement orders and may pursue all civil and criminal remedies for such violations.

A. Civil relief. If a person violates the provisions of this bylaw, or any associated regulations, permit, notice, or order issued thereunder, the Stormwater Authority may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

B. Orders. If the Stormwater Authority determines that a person's failure to follow the requirements of a Stormwater Management Permit and the related Erosion and Sedimentation Control Plan, or Operations and Maintenance Plan then the Authority may issue a written order to the person to remediate the adverse impact, which may include:

    (1) A requirement to cease and desist from the land-disturbing activity until there is compliance with the bylaw and provisions of the Stormwater Management Permit

    (2) Maintenance, installation or performance of additional erosion and sediment control measures;

    (3) Monitoring, analyses, and reporting

    (4) Remediation of erosion and sedimentation resulting directly or indirectly from the land-disturbing activity.

    (5) A requirement to eliminate discharges, directly or indirectly, into a watercourse or into the waters of the Commonwealth.

C. If the Stormwater Authority determines that abatement or remediation of pollutant is required, the order shall set forth a deadline for completion of the abatement or remediation. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the town may, at its option, undertake such work, and expenses thereof shall be charged to the violator or property owner. Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be

notified of the costs incurred by the town, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Stormwater Authority within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Stormwater Authority affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the cost shall become a special assessment against the property owner of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in G.L. Chapter 59, s 57 after the thirtieth (30) day at which the costs first become due.

D. Criminal and Civil Penalties. Any person who violates any provision of this bylaw, valid regulation, or the terms or conditions in any permit or order prescribed or issued there under, shall be subject to a fine not to exceed three hundred dollars ($300.00) for each day such violation occurs or continues or subject to a civil penalty, which may be assessed in an action brought on behalf of the town in any court of competent jurisdiction.

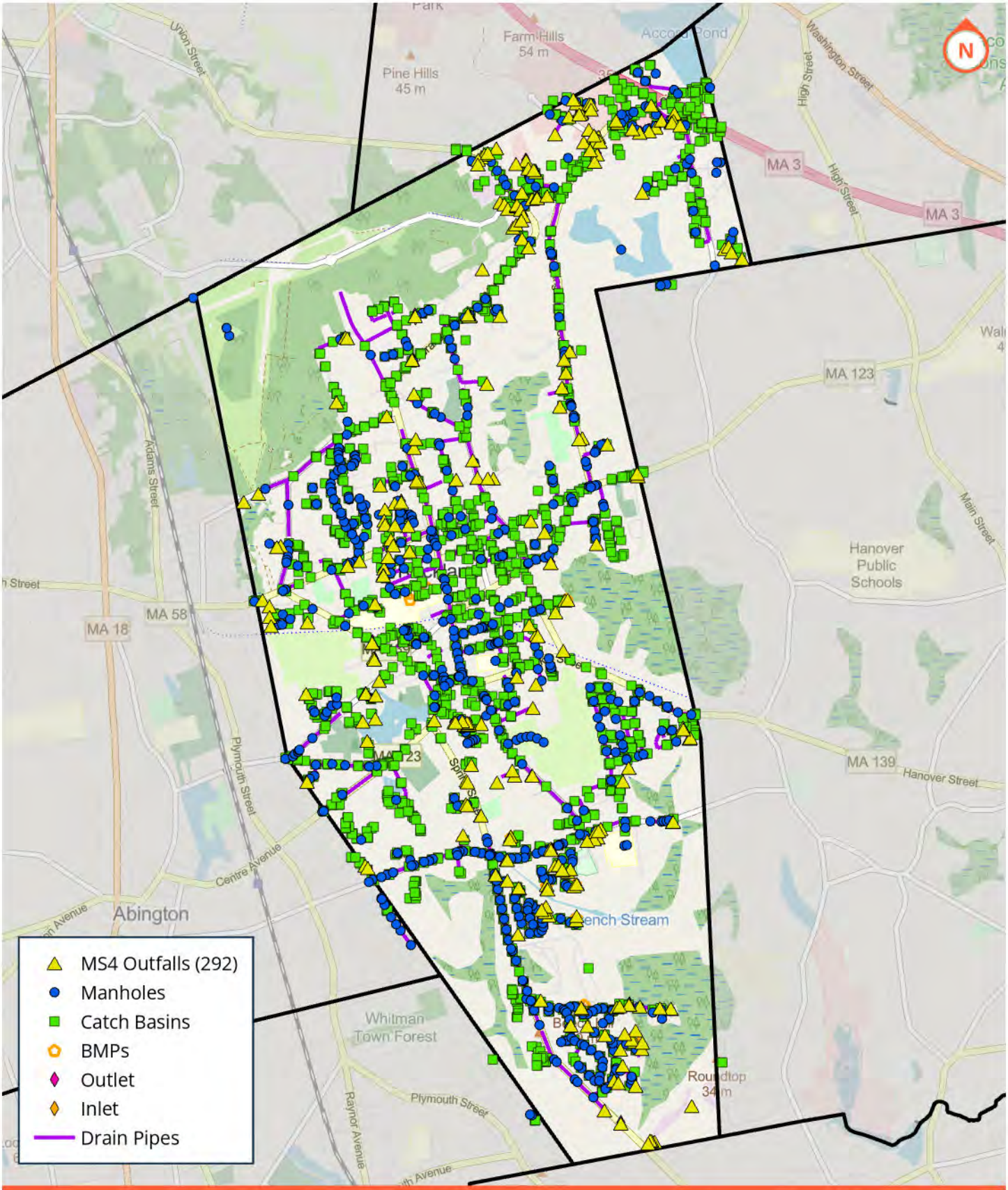
E. Noncriminal disposition. As an alternative to criminal prosecution or civil action, the Town may elect to utilize the noncriminal disposition procedure set forth in MGL c. 40, § 21D and Chapter 1, § 1-4 of the Town of Rockland General Bylaws, in which case the agent of the Stormwater Authority shall be the enforcing person. The penalty for the first violation shall be a warning. The penalty for the second violation shall be $100. The penalty for the third and subsequent violations shall be $300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

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

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

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

APPENDIX B
Stormwater System Mapping



Appendix B

Stormwater System

Rockland, MA

ENVIRONMENTAL PARTNERS

— An Apex Company —

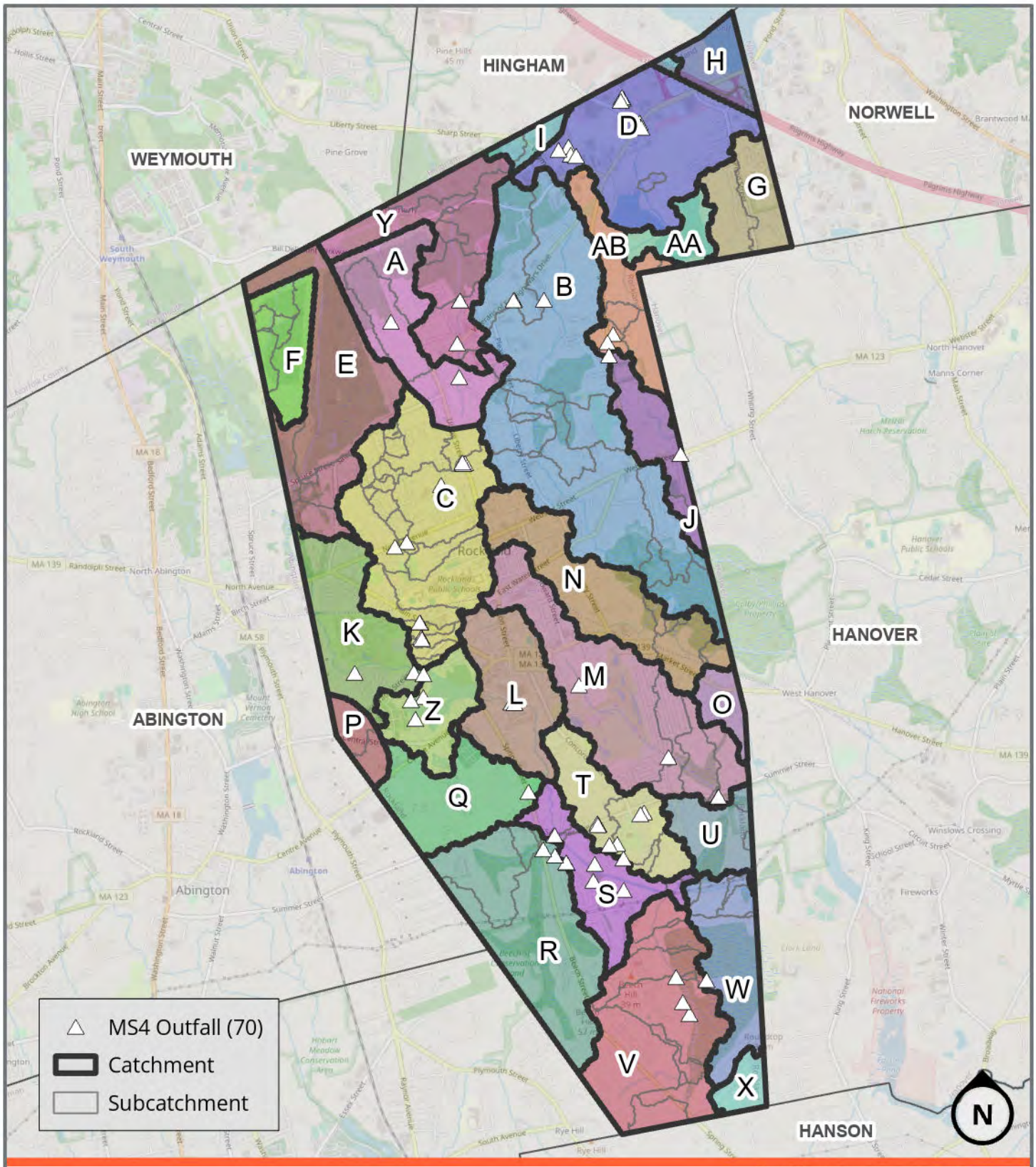
APPENDIX C
Catchment Delineation Ranking Matrix

Stormwater Catchment Delineation
Rockland, Massachusetts

				Catchment Scores						Outfall Scores									
Catchment ID	**Subcatchment ID**	**Receiving Water**	**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)**	**Outfall Screening Results**	**Outfall Score**	**Catchment Score**	**Outfall Ranking**	**Catchment Ranking**	**FY23 Catchment Status**
Information Source				Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	GIS and Storm System Maps	GIS Maps, Town Input	Impaired Waters List	Outfall inspections and sample results	Town Input	GIS Maps, Town Input						
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						
L	104	French Stream	73-O	2	2	0	2	1	2	1	0	0	0	Sampled	1	9	High	High	Complete
B	5	Cushing Brook	265-O	2	2	0	2	1	2	1	0	0	0	Dry	1	9	High	High	Complete
B	5	Cushing Brook	266-O	2	2	0	2	1	2	1	0	0	0	Dry	1	9	High	High	Complete
L	104	French Stream	26-O	2	2	0	2	1	2	1	0	0	0	Dry	1	9	High	High	Complete
Y	33	Old Swamp River	237-O	2	2	0	2	1	2	1	0	0	0	Dry	1	9	High	High	Complete
Y	33	Old Swamp River	364-O	2	2	0	2	1	2	1	0	0	0	Dry	1	9	High	High	Complete
M	80	Unnamed Tributary to French Stream	192-O	2	2	0	2	1	2	0	0	0	0	Sampled	0	9	Low	High	To be completed by Year 10
M	70	Unnamed Tributary to French Stream	194-O	2	2	0	2	1	2	0	0	0	0	Sampled	0	9	Low	High	To be completed by Year 10
B	35	Unnamed Wetlands to Cushing Brook	262-O	2	2	0	2	1	2	0	0	0	0	Dry	0	9	Low	High	To be completed by Year 10
M	80	Unnamed Tributary to French Stream	193-O	2	2	0	2	1	2	0	0	0	0	Dry	0	9	Low	High	To be completed by Year 10
M	70	Unnamed Tributary to French Stream	195-O	2	2	0	2	1	2	0	0	0	0	Dry	0	9	Low	High	To be completed by Year 10
Q	91	Unnamed Tributary to French Stream	173-O	1	2	0	2	1	2	0	0	0	0	Dry	0	8	Low	High	To be completed by Year 10
S	89	French Stream	177-O	0	2	0	2	1	0	1	0	0	0	Sampled	1	5	High	Low	Initial investigation and mapping started
K	78	French Stream	203-O	0	2	0	2	1	0	1	0	0	0	Sampled	1	5	High	Low	Complete
A	38	Old Swamp River	267-O	0	2	0	2	1	0	1	0	0	0	Sampled	1	5	High	Low	Complete
C	113	Old Swamp River	21-O	0	2	0	2	1	2	1	0	0	0	Dry	1	7	High	Low	Complete
C	113	Old Swamp River	20-O	0	2	0	2	1	2	1	0	0	0	Dry	1	7	High	Low	Complete
C	113	Old Swamp River	19-O	0	2	0	2	1	2	1	0	0	0	Dry	1	7	High	Low	Initial investigation and mapping started
K	78	Studleys Pond	200-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Complete
K	78	French Stream	90-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Complete
S	89	French Stream	176-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Complete
S	134	French Stream	211-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Non MS4 outlet
Z	105	Studleys Pond	93-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Complete
Z	105	Studleys Pond	201-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Complete
Z	105	Studleys Pond	202-O	0	2	0	2	1	0	1	0	0	0	Dry	1	5	High	Low	Complete
C	113	Old Swamp River	86-O	0	2	0	2	1	2	1	0	0	0	Dry	1	7	High	Low	Initial investigation and mapping started
S	134	Unnamed Wetlands to French Stream	186-O	0	2	0	2	1	0	0	0	0	0	Sampled	0	5	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	257-O	2	2	0	2	1	0	0	0	0	0	Sampled	0	7	Low	Low	To be completed by Year 10
C	71	Unnamed Tributary near Studleys Pond	288-O	0	2	0	2	1	2	0	0	0	0	Sampled	0	7	Low	Low	To be completed by Year 10
C	71	Unnamed Tributary near Studleys Pond	289-O	0	2	0	2	1	2	0	0	0	0	Sampled	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	53-O	2	2	0	2	1	0	0	0	0	0	Sampled	0	7	Low	Low	To be completed by Year 10
A	128	Unnamed Tributary to Old Swamp River	4-O	0	2	0	2	1	0	0	0	0	0	Dry	0	5	Low	Low	To be completed by Year 10
T	90	Unnamed Tributary to French Stream	101-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	Complete

Stormwater Catchment Delineation
Rockland, Massachusetts

				Catchment Scores						Outfall Scores								
Catchment ID	**Subcatchment ID**	**Receiving Water**	**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)**	**Outfall Screening Results**	**Outfall Score**	**Catchment Score**	**Outfall Ranking**	**Catchment Ranking**	**FY23 Catchment Status**
Information Source				Land Use/GIS Maps, Aerial Photography, Google Earth	Land Use Information, Town Input	Town Input, GIS Maps	Parcel Age	GIS and Storm System Maps	GIS Maps, Town Input	Impaired Waters List	Outfall inspections and sample results	Town Input	GIS Maps, Town Input						
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						
AB	1	Unnamed Wetlands to Cushing Brook	1-O	0	0	0	2	1	0	0	0	0	0	Dry	0	3	Low	Low	To be completed by Year 10
C	135	Unnamed Tributary near Studleys Pond	166-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
C	135	Unnamed Tributary near Studleys Pond	165-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
C	135	Unnamed Tributary near Studleys Pond	234-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	45-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
R	132	Unnamed Wetlands to French Stream	181-O	0	2	0	2	1	0	0	0	0	0	Dry	0	5	Low	Low	Non MS4 outlet
R	119	Unnamed Wetlands to French Stream	179-O	0	2	0	2	1	0	0	0	0	0	Dry	0	5	Low	Low	To be completed by Year 10
S	134	Unnamed Wetlands to French Stream	190-O	0	2	0	2	1	0	0	0	0	0	Dry	0	5	Low	Low	To be completed by Year 10
S	134	Unnamed Wetlands to French Stream	183-O	0	2	0	2	1	0	0	0	0	0	Dry	0	5	Low	Low	To be completed by Year 10
T	85	Unnamed Wetlands to French Stream	217-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
T	85	Unnamed Tributary to French Stream	95-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
T	90	Unnamed Tributary to French Stream	238-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
T	90	Unnamed Tributary to French Stream	103-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	Complete
V	111	Unnamed Tributary to French Stream	158-O	0	0	0	2	1	2	0	0	0	0	Dry	0	5	Low	Low	To be completed by Year 10
AB	1	Unnamed Wetlands to Cushing Brook	294-O	0	0	0	2	1	0	0	0	0	0	Dry	0	3	Low	Low	To be completed by Year 10
AB	1	Unnamed Wetlands to Cushing Brook	296-O	0	0	0	2	1	0	0	0	0	0	Dry	0	3	Low	Low	To be completed by Year 10
C	64	Unnamed Tributary near French Stream	197-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
C	64	Unnamed Tributary near French Stream	198-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
C	97	Unnamed Tributary near French Stream	300-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Pond near Ben Mann Brook	64-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Pond near Ben Mann Brook	66-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	47-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	54-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	139-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	138-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Tributary to Ben Mann Brook	137-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
D	16	Unnamed Pond near Ben Mann Brook	256-O	2	2	0	2	1	0	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
J	6	Unnamed Tributary to Ben Mann Brook	253-O	0	0	0	2	1	0	0	0	0	0	Dry	0	3	Low	Low	To be completed by Year 10
S	134	Unnamed Wetlands to French Stream	184-O	0	2	0	2	1	0	0	0	0	0	Dry	0	5	Low	Low	Complete
T	85	Unnamed Wetlands to French Stream	218-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	To be completed by Year 10
T	90	Unnamed Tributary to French Stream	102-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	Complete
V	127	Unnamed Tributary to French Stream	230-O	0	0	0	2	1	2	0	0	0	0	Dry	0	5	Low	Low	Non MS4 outlet
V	127	Unnamed Tributary to French Stream	229-O	0	0	0	2	1	2	0	0	0	0	Dry	0	5	Low	Low	To be completed by Year 10
W	54	Unnamed Wetlands to French Stream	160-O	0	0	0	2	1	0	0	0	0	0	Dry	0	3	Low	Low	To be completed by Year 10
T	85	Unnamed Wetlands to French Stream	219-O	0	2	0	2	1	2	0	0	0	0	Dry	0	7	Low	Low	Initial investigation and mapping started

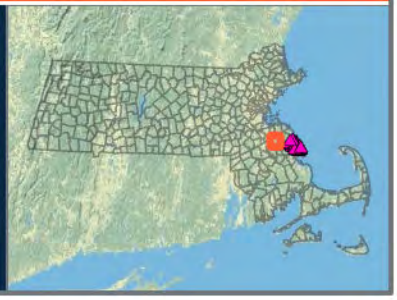


ENVIRONMENTAL PARTNERS
— An Apex Company —

Stormwater Catchment Delineation

Rockland, Massachusetts

0 0.5 1 Miles



APPENDIX D

Field Forms and Hyperlinks to Laboratories and Field Services Companies

Date: _____

Weather Observations: _____

Staff Onsite: _____

Photos: _____

Rockland 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

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: September 26, 2023

To Dave Taylor, Jr.- Highway Superintendent

From Natalie Pommersheim – Project Manager, Environmental Partners

CC Megan Fountaine – Stormwater Drainage Clerk

Karen Chan – Project Scientist, Environmental Partners

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

This memorandum summarizes the Illicit Discharge Detection & Elimination (IDDE) catchment investigations, outlined in Task 1b of the contract for Professional Engineering Services for the Municipal Separate Storm Sewer System (MS4) General Permit between the Town of Rockland and Environmental Partners Group LLC (EP), signed October 24, 2022. In accordance with the 2016 Massachusetts MS4 General Permit, the Town of Rockland must perform catchment investigations at each of the Town's 70 catchments by the end of the Permit term (i.e., Year 10). During the field investigations, 3 outfalls were identified as being culverted streams and were removed from the outfall inventory, bringing the total to 67 outfalls.

During dry weather conditions, EP visited 37 catchments on May 25, 2023, and between June 14, 2023, and June 16, 2023. Catchment investigations at 30 catchments were fully completed; initial field investigations were completed at 4 catchments and require additional Town assistance to complete the field work. Additionally, flow was encountered at 4 outfall catchments, which include:

- 41-O (22 Bay Path Lane)
- 44-O (10 Bay Path Lane)
- 60-O (22 Winter Circle)
- 73-O (31 Studley Court)
- 210-O (22 Winter Circle)
- 237-O (53 Boxberry Lane)

Field sampling results are shown in **Table 2: Stormwater Field Test Kit Results**.

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

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

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

As part of the catchment investigations, mapping updates within the Town's geographic information (GIS) database were also performed. Mapping updates included:

- Adding or removing stormwater structures (catch basins, drain manholes, drainage pipes, outfalls/outlets, inlets, and culverts)
- Updating pipe connectivity between stormwater structures
- Updating the GIS database with elevation/invert data and
- Reviewing the final totals of the stormwater structure inventory

The mapping updates have been made on the Town's Rockland IAM cloud-based GIS. Any additional mapping updates made by the Town or EP will continue to be made in the cloud platform.

Manhole/Catch Basin Sampling Results

A summary of the field sampling results is presented in **Table 2.** Environmental Partners sampled a total of 4 structures for field analysis. All 4 sampled structures showed detectable total chlorine. Surfactants, also known as detergents, were present in concentrations between 0.25 and 0.50 mg/L in all structures sampled. Lastly, there was no detectable ammonia found in any of the sampled structures. In accordance with the MS4 Permit, these field test results alone do not indicate the presence of an illicit discharge. A summary of the sampling kit results is presented in Table 2: Stormwater Field Test Kit Analysis Results.

Catchment Investigation Findings

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

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

- Outfall-catchment 19-O (18 Rice Avenue)
    - Could not complete catchment investigation due to the key junction manholes (KJMs) on both South Douglas Street and Holbrook Street being paved over. The drainage on both streets continues into Rice Avenue.
        - To complete the catchment investigation, additional Town assistance is needed to expose the buried manholes on both South Douglas Street and Holbrook Street.
- Outfall-catchment 86-O (59 South Douglas Street)
    - Could not complete catchment investigation due to paved manholes found on South Douglas Street. Crew could not confirm connectivity and end of catchment.
        - To complete the catchment investigation, additional Town assistance is needed to expose the buried manholes on South Douglas Street.
- Outfall-catchment 177-O (369 Summer Street)
    - Could not complete catchment investigation due to broken manhole cover found at KJM at the intersection of Beech Street and Summer Street. Per Town, construction is to be completed in the upcoming fiscal year.
        - To complete the catchment investigation, replacement of the broken manhole cover is needed. Additionally, if there are any paved over manholes along Summer Street that are within the 177-O catchment, they should remain exposed after construction has been completed.
- Outfall-catchment 219-O (619 Summer Street)
    - Could not complete catchment investigation due to the KJM being sealed, EP could not open the manhole to verify if that manhole was the end of the catchment or start of a new catchment.
        - To complete the catchment investigation, additional Town assistance is needed to unseal the manhole. The Town has stated that the manhole has been sealed due to past noise complaints.

Maintenance Items Noted

- Outfall-catchment 101-O (587R Summer Street)
    - Could not locate incoming pipe in upstream catch basin and confirmed that the surrounding catch basins did not discharge that basin. To confirm connectivity, record drawings are requested.
- Outfall-catchment 102-O (506 Summer Street)
    - Cleaning is recommended at the upstream manhole, MH-385, as the bottom of the structure was filled with debris and deposits.
- Outfall-catchment 103-O (506 Summer Street)

    - Cleaning is recommended at the upstream manhole, MH-383, as the bottom of the structure was filled with debris and deposits.
- Outfall-catchment 202-O (49 John Burke Drive)
    - Significant yard waste was found in the upstream catch basins, CB-723 and CB-724. Cleaning (jetting) is recommended throughout the line.
- Outfall-catchment 203-O (102 Brookside Road)
    - Significant overgrown and overhanging vegetation was observed over the upstream structure, catch basin CB-1785. For future access, Town should cut back and routinely prune the vegetation around that area.

Refined catchment delineations for the 30 inspected catchments are currently ongoing. A figure showing the refined catchment delineations will be submitted with the final catchment investigation report. Also, an SVF analysis was conducted for the catchments visited, and no SVFs were identified for any catchments. **Table 3: SVF Assessment** details the SVF assessment.

Recommendations

In conclusion, EP completed catchment investigations at 45 percent of the Town's outfall-catchments (30 out of 67). EP recommends the following:

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

Attachments

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

MS4 CERTIFICATION PAGE

ENVIRONMENTAL PARTNERS
— An Apex Company —

CERTIFICATION

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

Printed Name _____

Signature _____ Date _____

FIGURE 1

Catchment Investigation Progress

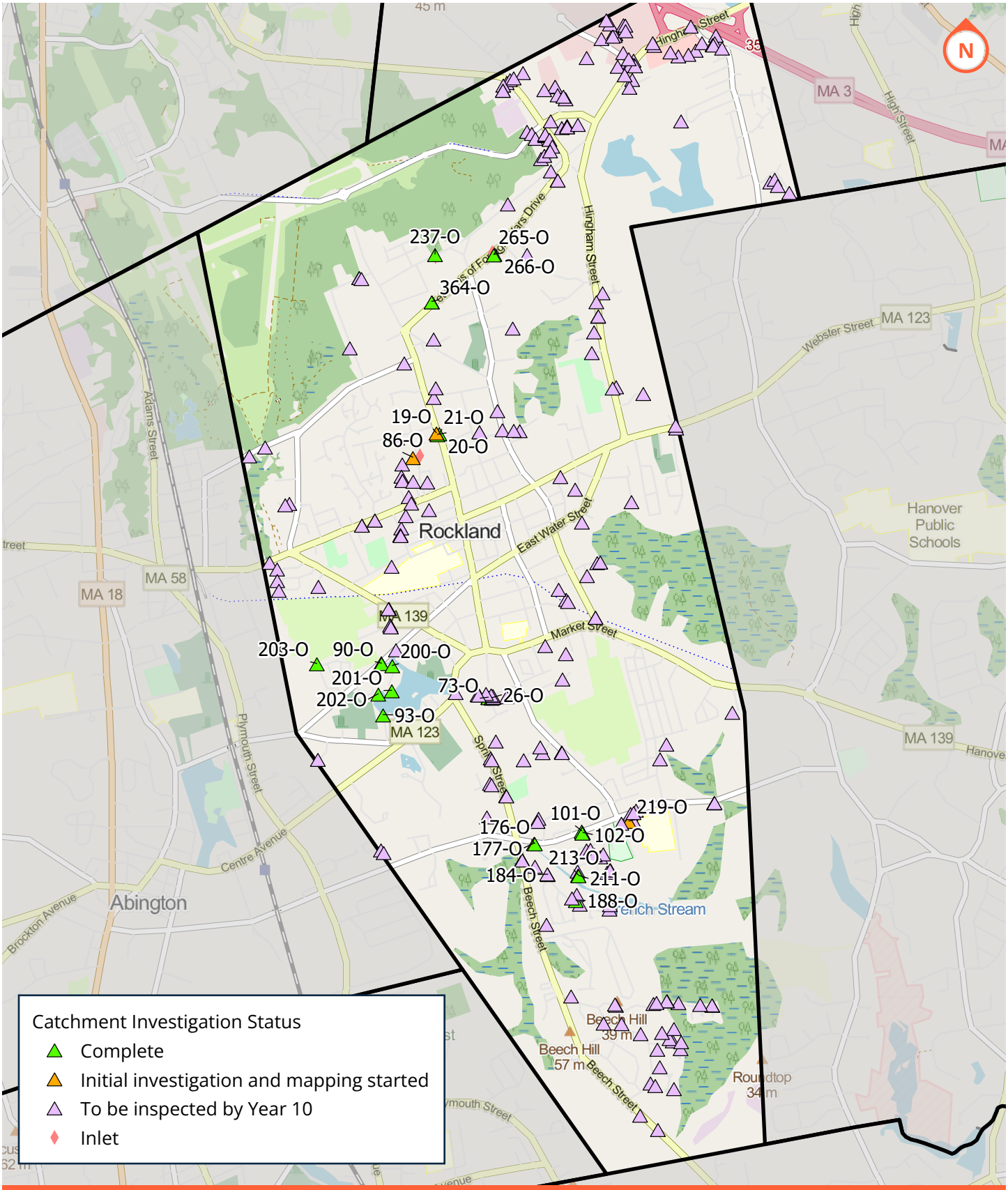


Figure 1
Catchment Investigation Progress
Rockland, MA
August 2023

ENVIRONMENTAL PARTNERS
An Apex Company

TABLE 1

Catchment Investigations Locations

Table 1: Catchment Investigation Locations
Rockland, MA

Outfall ID	Receiving Water	Approximate Street Address	Catchment Investigation Date	Flow Status	Catchment Investigation Status
184-O	Unnamed Wetlands to French Stream	13 Bay Path Lane	5/25/2023	Dry	Complete
188-O	Unnamed Wetlands to French Stream	27 Bay Path Lane	5/25/2023	Dry	Complete
210-O	French Stream	22 Winter Circle	5/25/2023	Flowing	Complete
214-O	Unnamed Wetlands to French Stream	6 Autumn Lane	5/25/2023	Dry	Complete
32-O	French Stream	50 Bay Path Lane	5/25/2023	Dry	Complete
34-O	Unnamed Wetland to French Stream	6 Autumn Lane	5/25/2023	Dry	Complete
41-O	French Stream	22 Bay Path Lane	5/25/2023	Flowing	Complete
43-O	French Stream	10 Bay Path Lane	5/25/2023	Dry	Complete
44-O	French Stream	10 Bay Path Lane	5/25/2023	Flowing	Culvert
45-O	French Stream	10 Bay Path Lane	5/25/2023	Dry	Complete
46-O	French Stream	2 Bay Path Lane	5/25/2023	Dry	Complete
60-O	French Stream	22 Winter Circle	5/25/2023	Flowing	Complete
101-O	Unnamed Tributary to French Stream	587R Summer Street	6/14/2023	Dry	Complete
102-O	Unnamed Tributary to French Stream	506 Summer Street	6/14/2023	Dry	Complete
103-O	Unnamed Tributary to French Stream	487 Summer Street	6/14/2023	Dry	Complete
176-O	French Stream	383 Summer Street	6/14/2023	Dry	Complete
177-O	French Stream	338 Summer Street	6/14/2023	Dry	Initial investigation and mapping started
219-O	Unnamed Wetlands to French Stream	619 Summer Street	6/14/2023	Dry	Initial investigation and mapping started
26-O	French Stream	30 Martha Drive	6/14/2023	Dry	Complete
73-O	French Stream	31 Studley Court	6/14/2023	Flowing	Complete
19-O	Old Swamp River	585 Union Street	6/15/2023	Dry	Initial investigation and mapping started
20-O	Old Swamp River	572 Union Street	6/15/2023	Dry	Complete
21-O	Old Swamp River	572 Union Street	6/15/2023	Dry	Complete
265-O	Cushing Brook	279 Pleasant Street	6/15/2023	Dry	Complete
266-O	Cushing Brook	279 Pleasant Street	6/15/2023	Dry	Complete
364-O	Old Swamp River	95 Lincoln Road	6/15/2023	Dry	Complete
90-O	French Stream	330 West Water Street	6/15/2023	Dry	Complete
151-O	Old Swamp River	295 Forest Street	6/16/2023	Dry	Culvert
200-O	Studleys Pond	4 Icehouse Woods Lane	6/16/2023	Dry	Complete
201-O	Studleys Pond	14 Icehouse Woods Lane	6/16/2023	Dry	Complete
202-O	Studleys Pond	49 John Burke Drive	6/16/2023	Dry	Complete
203-O	French Stream	102 Brookside Road	6/16/2023	Dry	Complete
237-O	Old Swamp River	53 Boxberry Lane	6/16/2023	Flowing	Complete
264-O	Cushing Brook	279 Pleasant Street	6/16/2023	Dry	Culvert
267-O	Old Swamp River	845 Liberty Street	6/16/2023	Dry	Complete
86-O	Old Swamp River	59 South Douglas Street	6/16/2023	Dry	Initial investigation and mapping started
93-O	Studleys Pond	34 Thayer Terrace	6/16/2023	Dry	Complete

TABLE 2

Stormwater Field Test Kit Results

Table 2: Stormwater Field Test Kit Results

Rockland, MA

Outfall ID		210-O	73-O	237-O	
Approximate Outfall Address		22 Winter Circle	31 Studley Court	69 Boxberry Lane	295 Forest Street
Discharge Waterbody		French Stream		Old Swamp River	
Structure ID		MH-327 (structure)	CB-1763 (structure)	MH-210-12:00 (incoming line on 69 Boxberry Lane)	MH-402 (incoming line on 295 Forest Street)
Date Sampled		5/25/2023	6/14/2023	6/16/2023	6/16/2023
Field Test Parameter	**Threshold**				
Ammonia (mg/L)	0.5 mg/L	0.0	0.0	0.0	0.0
Total Chlorine (mg/L)	Detectable	**0.02**	**0.09**	**0.13**	**0.15**
Surfactants (mg/L)	0.25 mg/L	**0.50**	**0.25**	**0.25**	**0.25**
pH	6.5 - 8.0	7.91	7.55	6.39	5.79
Temperature (°C)	None	17.8	23.1	19.6	22.8
Specific Conductance (µS/cm)	2000 µS/cm	406.0	479.0	640.0	320.0

Red, bolded values exceed contaminant criteria.

TABLE 3

SVF Assessment

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

			Required Factors								
Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	SVF Identified
101-O	587R Summer Street	Unnamed Tributary to French Stream	No	No	No	No	No	No	N/A	No	NO
102-O	506 Summer Street	Unnamed Tributary to French Stream	No	No	No	No	No	No	N/A	No	NO
103-O	487 Summer Street	Unnamed Tributary to French Stream	No	No	No	No	No	No	N/A	No	NO
176-O	383 Summer Street	French Stream	No	No	No	No	No	No	N/A	No	NO
200-O	4 Icehouse Woods Lane	Studleys Pond	No	No	No	No	No	No	N/A	No	NO
201-O	14 Icehouse Woods Lane	Studleys Pond	No	No	No	No	No	No	N/A	No	NO
202-O	49 John Burke Drive	Studleys Pond	No	No	No	No	No	No	N/A	No	NO
41-O	22 Bay Path Lane	French Stream	No	No	No	No	No	No	N/A	No	NO
43-O	10 Bay Path Lane	French Stream	No	No	No	No	No	No	N/A	No	NO
44-O	10 Bay Path Lane	French Stream	No	No	No	No	No	No	N/A	No	NO
45-O	10 Bay Path Lane	French Stream	No	No	No	No	No	No	N/A	No	NO
46-O	2 Bay Path Lane	French Stream	No	No	No	No	No	No	N/A	No	NO
34-O	6 Autumn Lane	Unnamed Wetland to French Stream	No	No	No	No	No	No	N/A	No	NO

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

Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	SVF Identified
60-O	22 Winter Circle	French Stream	No	No	No	No	No	No	N/A	No	NO
32-O	50 Bay Path Lane	French Stream	No	No	No	No	No	No	N/A	No	NO
203-O	102 Brookside Road	French Stream	No	No	No	No	No	No	N/A	No	NO
20-O	572 Union Street	Old Swamp River	No	No	No	No	No	No	N/A	No	NO
211-O	22 Winter Circle	French Stream	No	No	No	No	No	No	N/A	No	NO
213-O	22 Winter Circle	French Stream	No	No	No	No	No	No	N/A	No	NO
21-O	572 Union Street	Old Swamp River	No	No	No	No	No	No	N/A	No	NO
237-O	53 Boxberry Lane	Old Swamp River	No	No	No	No	No	No	N/A	No	NO
265-O	279 Pleasant Street	Cushing Brook	No	No	No	No	No	No	N/A	No	NO
266-O	279 Pleasant Street	Cushing Brook	No	No	No	No	No	No	N/A	No	NO
26-O	30 Martha Drive	French Stream	No	No	No	No	No	No	N/A	No	NO
364-O	95 Lincoln Road	Old Swamp River	No	No	No	No	No	No	N/A	No	NO
73-O	31 Studley Court	French Stream	No	No	No	No	No	No	N/A	No	NO
90-O	330 West Water Street	French Stream	No	No	No	No	No	No	N/A	No	NO
93-O	34 Thayer Terrace	Studleys Pond	No	No	No	No	No	No	N/A	No	NO

Notes:
SSOs were reported on1/26/2023 and 3/15/2023 at WWTP. No reports of SSO occuring outside of plant, only discharging into French Stream.

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

inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance)
e of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance)

CATCHMENT INVESTIGATION FORMS

19-O, MH-392

Created	2023-06-15 15:41:20 UTC by EPField 01
Updated	2023-07-11 20:50:18 UTC by EPField 01
Location	42.1378797, -70.9186181

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	19-O
Structure ID	MH-392
Structure Type	Manhole
Date	2023-06-15
Time	11:41
Address	585 Union Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	79

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	Clay
Pipe Diameter (inches)	8
Pipe Invert (inches)	48

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	48
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water present

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

20-O, CB-1032

Created	2023-06-15 17:20:56 UTC by EPField 01
Updated	2023-07-31 19:28:06 UTC by EPField 01
Location	42.1373968, -70.9182191

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	20-O
Structure ID	CB-1032
Structure Type	Catch Basin
Date	2023-06-15
Time	13:20
Address	572 Union Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

12

Pipe Clock Position	12
Flow Direction	Out
Pipe Material	HDPE
Pipe Diameter (inches)	18
Pipe Invert (inches)	63

6

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

6

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

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	HDPE
Pipe Diameter (inches)	10
Pipe Invert (inches)	57

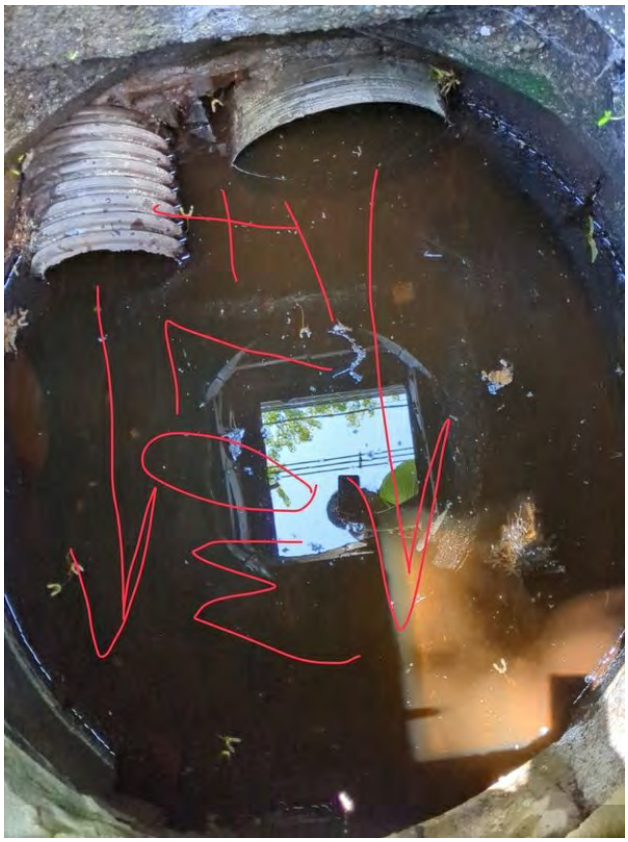
Pipes Submerged	Fully
Flow Present	Yes
Flow Description	Trickle
Flow Source	12 and 11 pipe from culvert
Structure Notes	Culvert runs through structure

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos



21-O, CB-1031

Created	2023-06-15 17:34:34 UTC by EPField 01
Updated	2023-07-31 19:28:49 UTC by EPField 01
Location	42.1374636, -70.9181807

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	21-O
Structure ID	CB-1031
Structure Type	Catch Basin
Date	2023-06-15
Time	13:34
Address	572 Union Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	65

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	HDPE
Pipe Diameter (inches)	10
Pipe Invert (inches)	61

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	HDPE
Pipe Diameter (inches)	10
Pipe Invert (inches)	61

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	65
Pipes Submerged	Fully
Flow Present	No
Structure Notes	Culvert runs through the structure

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

26-O, CB-0

Created	2023-06-14 18:16:49 UTC by EPField 01
Updated	2023-07-11 23:14:00 UTC by EPField 01
Location	42.1189641, -70.9132994

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	26-O
Structure ID	CB-0
Structure Type	Catch Basin
Date	2023-06-14
Time	14:16
Address	30 Martha Drive Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	40

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	40

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	42
Pipes Submerged	No
Flow Present	No
Structure Notes	Catch basin is on private property

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

73-O, CB-1763

Created	2023-06-14 17:40:02 UTC by EPField 01
Updated	2023-07-11 23:15:07 UTC by EPField 01
Location	42.1186536, -70.9138374

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	73-O
Structure ID	CB-1763
Structure Type	Catch Basin
Date	2023-06-14
Time	13:40
Address	31 Studley Court Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	72

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	10
Pipe Invert (inches)	45

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	42

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	69
Pipes Submerged	Fully
Flow Present	Yes
Flow Description	Moderate
Flow Source	Unknown but could be surcharged flow from culvert
Structure Notes	Verify if this is part of MS4

Physical Indicators

Floatables	No
Odor	No

Structure

Sampling Location	Structure

Field Kits

Temperature	73.6
pH	7.55
Specific Conductivity (SPC)	479
Surfactants	0.25
Chlorine	0.09
Ammonia	0
Surface Photos	

Interior Photos

86-O, MH-405

Created	2023-06-16 12:30:45 UTC by EPField 01
Updated	2023-07-11 23:16:02 UTC by EPField 01
Location	42.1358108, -70.920268

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	86-O
Structure ID	MH-405
Structure Type	Manhole
Date	2023-06-16
Time	08:30
Address	59 South Douglas Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	40

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	39

9

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

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	39

4

Pipe Clock Position	4
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	39

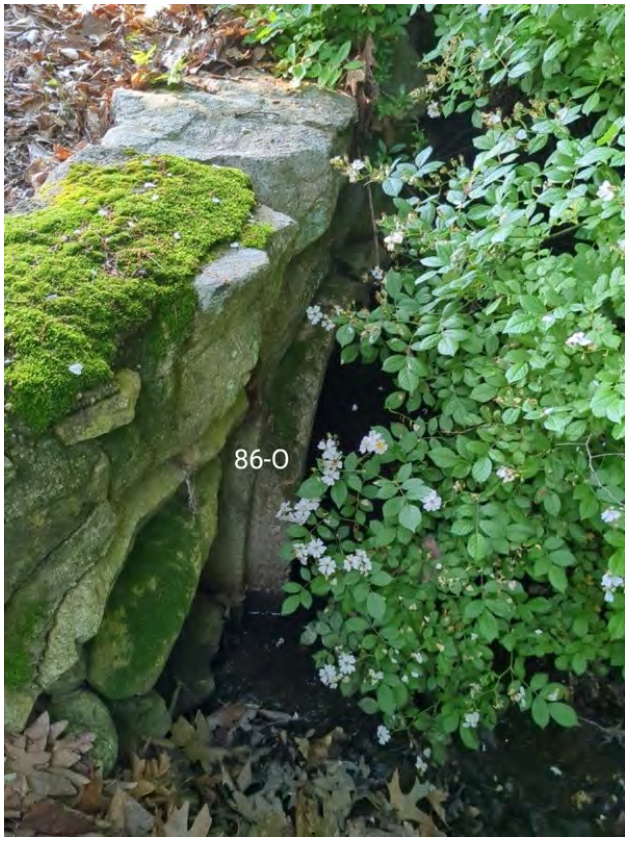
Pipes Submerged	Partially
Submerged Pipes	All
Flow Present	No
Structure Notes	Standing water present. 12:00 incoming pipe is from a culvert located upstream.

Physical Indicators

Floatables	No
Odor	No
General Notes	Upstream structures on S. Douglas are paved over.
Surface Photos	

Interior Photos

Other Photos



90-O, CB-751

Created	2023-06-15 15:01:20 UTC by EPField 01
Updated	2023-06-15 15:04:23 UTC by EPField 01
Location	42.1214306, -70.9236132

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	90-O
Structure ID	CB-751
Structure Type	Catch Basin
Date	2023-06-15
Time	11:01
Address	330 West Water Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	64

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	49
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

93-O, CB-1783

Created	2023-06-16 19:08:44 UTC by EPField 01
Updated	2023-07-11 23:16:42 UTC by EPField 01
Location	42.1177207, -70.9234464

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	93-O
Structure ID	CB-1783
Structure Type	Catch Basin
Date	2023-06-16
Time	15:08
Address	34 Thayer Terrace Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	50

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	34
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water present

Physical Indicators

Floatables	No
Odor	No
General Notes	Catch basins upstream and along Thayer Terrace do not connect to this structure. Verify with Town how the system drains. Town stated that this area may be a "coffin catch basin" area.

Surface Photos

Interior Photos

Other Photos

101-O, CB-1768

Created	2023-06-14 15:32:34 UTC by EPField 01
Updated	2023-07-11 20:27:48 UTC by EPField 01
Location	42.1093323, -70.9053118

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	101-O
Structure ID	CB-1768
Structure Type	Catch Basin
Date	2023-06-14
Time	11:32
Address	587R Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	80

6

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

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	8
Pipe Invert (inches)	49
Pipe Notes	Could not find any incoming structures from the 11:00
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water observed

Physical Indicators

Floatables	No
Odor	No
General Notes	Could not locate where the 11:00 incoming pipe comes from

Surface Photos

Interior Photos

Other Photos

102-O, MH-385

Created	2023-06-14 15:45:29 UTC by EPField 01
Updated	2023-07-11 20:29:25 UTC by EPField 01
Location	42.1097411, -70.9046101

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	102-O
Structure ID	MH-385
Structure Type	Manhole
Date	2023-06-14
Time	11:45
Address	506 Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	Yes
Maintenance Needs	Debris
Manhole Invert (inches)	61

6

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

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	PVC
Pipe Diameter (inches)	8
Pipe Invert (inches)	68
Pipes Submerged	No
Flow Present	No
Structure Notes	Structure is filled with debris

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

103-O, MH-383

Created	2023-06-14 15:08:32 UTC by EPField 01
Updated	2023-07-11 20:44:08 UTC by EPField 01
Location	42.1094934, -70.9054625

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	103-O
Structure ID	MH-383
Structure Type	Manhole
Date	2023-06-14
Time	11:08
Address	487 Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	73

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	76

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	66

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	PVC
Pipe Diameter (inches)	12
Pipe Invert (inches)	61
Pipes Submerged	Partially
Submerged Pipes	6:00
Flow Present	No
Structure Notes	Standing water present

Physical Indicators

Floatables	No

Odor	No
Surface Photos	

Interior Photos

103-O, MH-384

Created	2023-06-14 15:24:45 UTC by EPField 01
Updated	2023-07-11 20:41:38 UTC by EPField 01
Location	42.1096978, -70.9047412

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	103-O
Structure ID	MH-384
Structure Type	Manhole
Date	2023-06-14
Time	11:24
Address	506 Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	Yes
Maintenance Needs	Debris build up
Manhole Invert (inches)	64

6

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

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61
Pipe Notes	Filled with debris
Pipes Submerged	Partially
Submerged Pipes	6:00
Flow Present	No
Structure Notes	Debris and standing water present

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

151-O, 151-O

Created	2023-06-16 17:02:42 UTC by EPField 01
Updated	2023-06-16 17:03:33 UTC by EPField 01
Location	42.1518039, -70.9141571

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	151-O
Structure ID	151-O
Structure Type	Culvert
Date	2023-06-16
Time	13:02
Address	295 Forest Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	0
Pipes Submerged	No
Flow Present	No
Structure Notes	This outfall is actually a culvert.

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

176-O, MH-382

Created	2023-06-14 14:13:42 UTC by EPField 01
Updated	2023-07-11 20:48:47 UTC by EPField 01
Location	42.1089609, -70.9087734

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	176-O
Structure ID	MH-382
Structure Type	Manhole
Date	2023-06-14
Time	10:13
Address	383 Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	59

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	61

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	58

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

177-O, MH-388

Created	2023-06-14 13:38:59 UTC by EPField 01
Updated	2023-07-11 20:49:25 UTC by EPField 01
Location	42.1090631, -70.9102395

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	177-O
Structure ID	MH-388
Structure Type	Manhole
Date	2023-06-14
Time	09:38
Address	338 Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	54

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	48

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	52
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

184-O, MH-462

Created	2023-05-25 16:13:51 UTC by Vern Lincoln
Updated	2023-07-17 15:26:07 UTC by EPField 01
Location	42.1064379, -70.9078958

Background Data

Client	Town of Rockland
EP Representatives	Megan Fountaine, Vern Lincoln
Outfall ID	184-O
Structure ID	MH-462
Structure Type	Manhole
Date	2023-05-25
Time	12:13
Address	13 Bay Path Lane Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	52

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	53

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	54

1

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

12

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

Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	11

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

188-O, MH-464

Created	2023-05-25 17:22:29 UTC by Vern Lincoln
Updated	2023-07-17 15:26:44 UTC by EPField 01
Location	42.1046755, -70.9055319

Background Data

Client	Town of Rockland
EP Representatives	Megan Fountaine, Vern Lincoln
Outfall ID	188-O
Structure ID	MH-464
Structure Type	Manhole
Date	2023-05-25
Time	13:22
Address	27 Bay Path Lane Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	66

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	66

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	67

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	62
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	Groundwater

Physical Indicators

Floatables	No

Odor	No
Surface Photos	
Interior Photos	

200-O, MH-401

Created	2023-06-16 17:30:19 UTC by EPField 01
Updated	2023-07-11 20:50:59 UTC by EPField 01
Location	42.120997, -70.9228607

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	200-O
Structure ID	MH-401
Structure Type	Manhole
Date	2023-06-16
Time	13:30
Address	4 Icehouse Woods Lane Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	70

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	68

1

Pipe Clock Position	1
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)	12
Pipe Invert (inches)	70
Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

201-O, CB-755

Created	2023-06-16 17:20:06 UTC by EPField 01
Updated	2023-07-11 20:51:27 UTC by EPField 01
Location	42.1198355, -70.9228877

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	201-O
Structure ID	CB-755
Structure Type	Catch Basin
Date	2023-06-16
Time	13:20
Address	14 Icehouse Woods Lane Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	65

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	51
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water observed

Physical Indicators

Floatables	No
Odor	No
General Notes	Some pollen on top of the standing water.

Surface Photos

Interior Photos

202-O, CB-723

Created	2023-06-16 17:48:52 UTC by EPField 01
Updated	2023-07-11 20:52:51 UTC by EPField 01
Location	42.1192215, -70.9241203

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	202-O
Structure ID	CB-723
Structure Type	Catch Basin
Date	2023-06-16
Time	13:48
Address	49 John Burke Drive Rockland, Massachusetts 02370

Structure Information

Maintenance Required	Yes
Maintenance Needs	Yard Waste
Manhole Invert (inches)	44

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	28

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	Corrugated Metal
Pipe Diameter (inches)	12
Pipe Invert (inches)	30

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	30
Pipes Submerged	Partially
Submerged Pipes	All
Flow Present	No
Structure Notes	Both this catch basin and the one upstream need to be cleaned.

Physical Indicators

Floatables	No
Odor	Yes
Odor Type	Decaying vegetation
Surface Photos	

Interior Photos

203-O, CB-1785

Created	2023-06-16 18:09:53 UTC by EPField 01
Updated	2023-07-11 22:57:01 UTC by EPField 01
Location	42.12115, -70.92941

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	203-O
Structure ID	CB-1785
Structure Type	Catch Basin
Date	2023-06-16
Time	14:09
Address	102 Brookside Road Rockland, Massachusetts 02370

Structure Information

Maintenance Required	Yes
Maintenance Needs	Clear overgrown vegetation above structure
Manhole Invert (inches)	53

6

Pipe Clock Position	6
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	54

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	PVC
Pipe Diameter (inches)	15
Pipe Invert (inches)	35

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	24

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15

Pipe Invert (inches)	39
Pipes Submerged	Partially
Submerged Pipes	6:00
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

213-O, 211-O, MH-327

Created	2023-05-25 14:23:53 UTC by Vern Lincoln
Updated	2023-07-12 13:59:25 UTC by EPField 01
Location	42.1073437, -70.9048759

Background Data

Client	Town of Rockland
EP Representatives	Megan Fountaine, Vern Lincoln
Outfall ID	213-O, 211-O
Structure ID	MH-327
Structure Type	Manhole
Date	2023-05-25
Time	10:23
Address	22 Winter Circle Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	59

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	50

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	0
Pipe Invert (inches)	60
Pipes Submerged	No
Flow Present	Yes
Flow Description	Trickle
Flow Source	2, 10

Physical Indicators

Floatables	No

Odor	No

Structure

Sampling Location	Structure

Field Kits

Temperature	64
pH	7.91
Specific Conductivity (SPC)	4.06
Surfactants	0.5
Chlorine	0.02
Ammonia	0
Surface Photos	

Interior Photos

219-O, CB-481

Created	2023-06-14 16:42:18 UTC by EPField 01
Updated	2023-07-11 23:02:29 UTC by EPField 01
Location	42.110868, -70.900687

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	219-O
Structure ID	CB-481
Structure Type	Catch Basin
Date	2023-06-14
Time	12:42
Address	619 Summer Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	69

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	HDPE
Pipe Diameter (inches)	15
Pipe Invert (inches)	53

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	HDPE
Pipe Diameter (inches)	18
Pipe Invert (inches)	58
Pipe Notes	Incoming pipe is larger than outgoing.

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	HDPE
Pipe Diameter (inches)	15
Pipe Invert (inches)	54
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water present

Physical Indicators

Floatables	No

Odor	No
Surface Photos	
Interior Photos	

237-O, MH-210

Created	2023-06-16 14:49:01 UTC by EPField 01
Updated	2023-07-11 23:08:32 UTC by EPField 01
Location	42.1500766, -70.9177302

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	237-O
Structure ID	MH-210
Structure Type	Manhole
Date	2023-06-16
Time	10:49
Address	69 Boxberry Lane Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	83

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	77

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	76

5

Pipe Clock Position	5
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	62

Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	12:00

Physical Indicators

Floatables	No
Odor	No

Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	67.3
pH	6.39
Specific Conductivity (SPC)	640
Surfactants	0.25
Chlorine	0.13
Ammonia	0
General Notes	Some suds observed around the 12:00 pipe
Surface Photos	

Interior Photos

237-O, MH-402

Created	2023-06-16 15:43:31 UTC by EPField 01
Updated	2023-07-11 23:07:33 UTC by EPField 01
Location	42.1518039, -70.9141571

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	237-O
Structure ID	MH-402
Structure Type	Manhole
Date	2023-06-16
Time	11:43
Address	295 Forest Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	84

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	77

9

Pipe Clock Position	9
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	68

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	76

3

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

Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	12:00 and 9:00
Structure Notes	9:00 is a trickle and does not have enough flow to sample

Physical Indicators

Floatables	No
Odor	No

Pipe, 12

Sampling Location	Pipe
Pipe Clock Position	12

Field Kits

Temperature	73
pH	5.79
Specific Conductivity (SPC)	320
Surfactants	0.25
Chlorine	0.15
Ammonia	0
Surface Photos	

Interior Photos

237-O, MH-404

Created	2023-06-16 14:17:49 UTC by EPField 01
Updated	2023-07-11 23:08:55 UTC by EPField 01
Location	42.1497704, -70.9184869

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	237-O
Structure ID	MH-404
Structure Type	Manhole
Date	2023-06-16
Time	10:17
Address	53 Boxberry Lane Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	62

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	68

8

Pipe Clock Position	8
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	55

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	56

3

Pipe Clock Position	3
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	63

Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

264-O, 264-O

Created	2023-06-16 13:58:29 UTC by EPField 01
Updated	2023-06-16 14:02:51 UTC by EPField 01
Location	42.1498733, -70.9129567

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	264-O
Structure ID	264-O
Structure Type	Outfall
Date	2023-06-16
Time	09:58
Address	279 Pleasant Street Rockland, Massachusetts 02370

Structure Information

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

Physical Indicators

Floatables	No
Odor	No
General Notes	Not an outfall, culverted stream

Surface Photos

Interior Photos

Other Photos

265-O, MH-397

Created	2023-06-15 12:13:04 UTC by EPField 01
Updated	2023-07-11 23:11:14 UTC by EPField 01
Location	42.1499785, -70.9129457

Background Data

Client	Town of Holbrook
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	265-O
Structure ID	MH-397
Structure Type	Manhole
Date	2023-06-15
Time	08:13
Address	279 Pleasant Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	81

6

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

10

Pipe Clock Position	10
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	70

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	77

3

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

Pipes Submerged	Partially
Submerged Pipes	6
Flow Present	No
Structure Notes	Standing water present

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

Other Photos

266-O, MH-394

Created	2023-06-15 14:08:25 UTC by EPField 01
Updated	2023-07-11 23:11:50 UTC by EPField 01
Location	42.1498852, -70.9130585

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan
Outfall ID	266-O
Structure ID	MH-394
Structure Type	Manhole
Date	2023-06-15
Time	10:08
Address	279 Pleasant Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	83

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	24
Pipe Invert (inches)	83

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	80

2

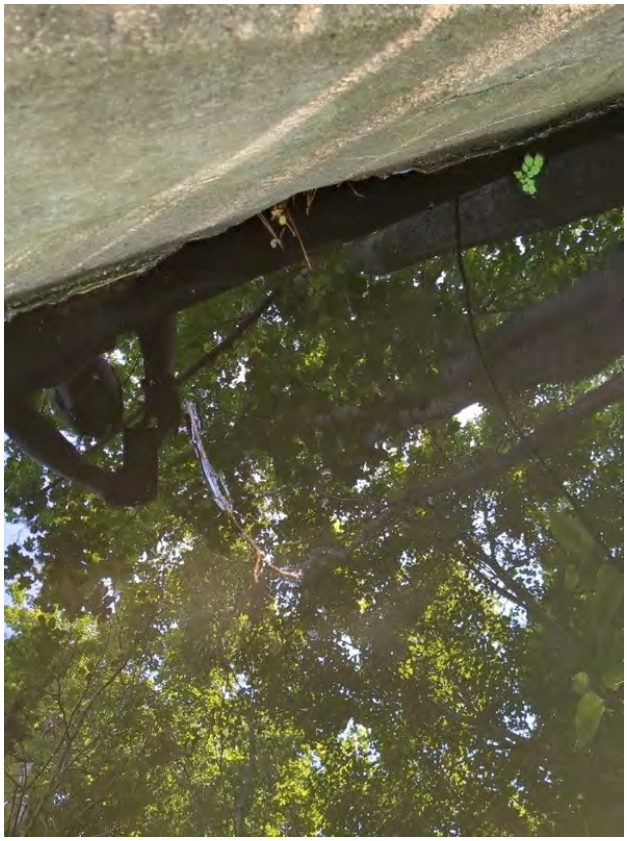
Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	69
Pipes Submerged	No
Flow Present	No
Structure Notes	Standing water present

Physical Indicators

Floatables	No
Odor	No

General Notes	Most upstream structure before the outfall.
Surface Photos	
Interior Photos	

Other Photos



266-O, MH-395

Created	2023-06-15 13:55:11 UTC by EPField 01
Updated	2023-07-11 23:11:35 UTC by EPField 01
Location	42.1496961, -70.9134874

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	266-O
Structure ID	MH-395
Structure Type	Manhole
Date	2023-06-15
Time	09:55
Address	279 Pleasant Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	74

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	75

11

Pipe Clock Position	11
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	61

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	18
Pipe Invert (inches)	75

3

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

Pipes Submerged	Partially
Submerged Pipes	6
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

267-O, 267-O

Created	2023-06-16 13:07:29 UTC by EPField 01
Updated	2023-07-11 23:13:24 UTC by EPField 01
Location	42.1434223, -70.918703

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	267-O
Structure ID	267-O
Structure Type	Manhole
Date	2023-06-16
Time	09:07
Address	845 Liberty Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	164

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	164

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	30
Pipe Invert (inches)	169

3

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

7

Pipe Clock Position	7
Flow Direction	In
Pipe Material	HDPE
Pipe Diameter (inches)	4
Pipe Invert (inches)	28

Pipes Submerged	Partially
Submerged Pipes	6:00 and 12:00
Flow Present	Yes
Flow Description	Moderate
Flow Source	Culverted stream

Physical Indicators

Floatables	No
Odor	No
General Notes	Culverted stream runs through the manhole. Drain is also deeper than sewer; SVF identified. Manhole is the outfall.
Surface Photos	

Interior Photos

Other Photos

364-O, MH-400

Created	2023-06-15 13:06:39 UTC by EPField 01
Updated	2023-07-11 23:14:38 UTC by EPField 01
Location	42.1463844, -70.9187889

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	364-O
Structure ID	MH-400
Structure Type	Manhole
Date	2023-06-15
Time	09:06
Address	95 Lincoln Road Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	68

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	RCP
Pipe Diameter (inches)	15
Pipe Invert (inches)	67

12

Pipe Clock Position	12
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	64

1

Pipe Clock Position	1
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	63

2

Pipe Clock Position	2
Flow Direction	In
Pipe Material	RCP
Pipe Diameter (inches)	12
Pipe Invert (inches)	47

Pipes Submerged	No
Flow Present	No

Physical Indicators

Floatables	No
Odor	No
Surface Photos	

Interior Photos

NEW OUTLET, CB-1793

Created	2023-06-16 16:19:30 UTC by EPField 01
Updated	2023-07-11 23:32:52 UTC by EPField 01
Location	42.1557659, -70.9076089

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	NEW OUTLET
Structure ID	CB-1793
Structure Type	Catch Basin
Date	2023-06-16
Time	12:19
Address	526 Forest Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	38

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	PVC
Pipe Diameter (inches)	8
Pipe Invert (inches)	18
Pipes Submerged	No
Flow Present	No
Structure Notes	Per GIS, this outlet is not within 100' of a waterbody or wetland and is therefore not a MS4 outfall.

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

NEW OUTLET-2, CB-1794

Created	2023-06-16 16:23:18 UTC by EPField 01
Updated	2023-07-11 23:32:32 UTC by EPField 01
Location	42.1557115, -70.9076069

Background Data

Client	Town of Rockland
EP Representatives	Karen Chan, Megan Fountaine
Outfall ID	NEW OUTLET-2
Structure ID	CB-1794
Structure Type	Catch Basin
Date	2023-06-16
Time	12:23
Address	526 Forest Street Rockland, Massachusetts 02370

Structure Information

Maintenance Required	No
Manhole Invert (inches)	37

6

Pipe Clock Position	6
Flow Direction	Out
Pipe Material	PVC
Pipe Diameter (inches)	8
Pipe Invert (inches)	20
Pipes Submerged	No
Flow Present	No
Structure Notes	Per GIS, this outlet is not within 100' of a waterbody or wetland and is therefore not a MS4 outfall.

Physical Indicators

Floatables	No
Odor	No

Surface Photos

Interior Photos

Other Photos

APPENDIX F
System Vulnerability Factor (SVF) Inventory

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

			Required Factors								
Outfall ID	Address	Receiveing Water	History of SSOs	Common or Twin Invert Manholes	Common Trench Construction	Storm/Sanitary Crossings (Sanitary Above)	Sanitary Lines with Underdrains	Inadequate Sanitary Level of Service	Areas Formerly Served by Combined Sewers	Sanitary Infrastructure Defects	**SVF Identified**
101-O	587R Summer Street	Unnamed Tributary to French Stream	No	No		No?			N/A		
102-O	506 Summer Street	Unnamed Tributary to French Stream	No	No		No			N/A		
103-O	487 Summer Street	Unnamed Tributary to French Stream	No	No		No			N/A		
176-O	383 Summer Street	French Stream	No	No		No		No	N/A	No	
200-O	4 Icehouse Woods Lane	Studleys Pond	No	No		No		No	N/A	No	
201-O	14 Icehouse Woods Lane	Studleys Pond	No	No		No		No	N/A	No	
202-O	49 John Burke Drive	Studleys Pond	No	No		No Sewer?		No	N/A	No	
203-O	102 Brookside Road	French Stream	No	No		No		No	N/A	No	
20-O	572 Union Street	Old Swamp River	No	No		No		No	N/A	No	
211-O	22 Winter Circle	French Stream	No	No		No		No	N/A	No	
213-O	22 Winter Circle	French Stream	No	No		No		No	N/A	No	
21-O	572 Union Street	Old Swamp River	No	No		No		No	N/A	No	
237-O	53 Boxberry Lane	Old Swamp River	No	No		No		No	N/A	No	
265-O	279 Pleasant Street	Cushing Brook	No	No		No Sewer?		No	N/A	No	
266-O	279 Pleasant Street	Cushing Brook	No	No		No Sewer?		No	N/A	No	
26-O	30 Martha Drive	French Stream	No	No		No		No	N/A	No	
364-O	95 Lincoln Road	Old Swamp River	No	No		No		No	N/A	No	
73-O	31 Studley Court	French Stream	No	No		No Sewer?		No	N/A	No	
90-O	330 West Water Street	French Stream	No	No		No		No	N/A		
93-O	34 Thayer Terrace	Studleys Pond	No	No		No		No	N/A	No	

Notes:
SSO was reported on 3/15/2023 at WWTP. No reports of SSO occuring outside of plant, only discharging into French Stream.

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 Evalu
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

inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance)
e of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance)

APPENDIX G

New England Interstate Water Pollution Control Commission IDDE Manual

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities

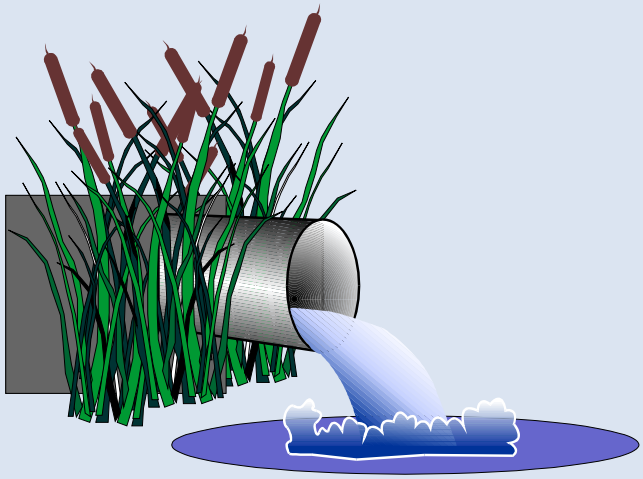
NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

January 2003

This page is intentionally blank.

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

A Handbook for Municipalities



Prepared by the

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

Boott Mills South

100 Foot of John Street

Lowell, Massachusetts 01852

Ronald F. Poltak, *Executive Director*

COMPACT MEMBER STATES

Connecticut
Maine
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

Copies of this document may be downloaded from *www.neiwpcc.org.*

January 2003

ACKNOWLEDGEMENTS

This manual was developed by the New England Interstate Water Pollution Control Commission (NEIWPCC). NEIWPCC is a nonprofit interstate agency, established by an Act of Congress in 1947, that serves its member states (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) by providing coordination, public education, training, and leadership in the management and protection of water quality.

This project was initiated by NEIWPCC's Storm Water Workgroup, which is composed of state and federal environmental agency staff. The group perceived a need for resources to help municipalities in NEIWPCC-member states that are regulated under the U.S. Environmental Protection Agency's (EPA's) Phase II storm water program comply with regulatory requirements. This manual is intended to help municipalities develop illicit discharge detection and elimination programs—one of the six minimum control measures under Phase II.

This manual was made possible by a grant from the U.S. Environmental Protection Agency. The contents do not necessarily reflect the views and policies of EPA or NEIWPCC's member states, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

This manual was compiled and written by Rebekah Lacey, with assistance from Kim Starbuck and other NEIWPCC staff. Editing, graphic design, and layout were performed by Ellen Frye and Ricki Pappo of ENOSIS. Thelma Murphy served as the EPA Project Officer. NEIWPCC would like to thank Andrea Donlon, NHDES, for her many contributions to this document, which included providing information, comments, and photographs—most of the photographs in the manual were either provided by Andrea or taken by NEIWPCC staff while accompanying Andrea on field work.

NEIWPCC would also like to thank the following people who contributed their time in providing information for and/or reviewing the manual:

Interviews or Other Information

Kathy Baskin, Charles River Watershed Association
Paul Barden, BWSC
Michael Cuneo, Town of Dedham, MA
Andrea Donlon, NHDES
Tim Grover, City of Winooski, VT
Charlie Jewell, BWSC
Natalie Landry, NHDES
Ginny Scarlet, MADEP

Review

Jeff Andrews, NHDES
Andrea Donlon, NHDES
Bryant Firmin, MADEP
Greg Goblick, RIDEM
Tim Grover, City of Winooski, VT
David Ladd, MEDEP
Steve Lipman, MADEP
Thomas Mahin, MADEP
Thelma Murphy, USEPA
Jim Pease, VTDEC
Ginny Scarlet, MADEP
Chris Stone, CTDEP

CONTENTS

ACKNOWLEDGEMENTS 4

CONTENTS 5

ACRONYMS 7

INTRODUCTION 9

Who Administers the Phase II Storm Water Program? 9
What Is Regulated Under Phase II? 9
Where Does IDDE Fit In? 10
About This Manual 10

1 GETTING STARTED WITH YOUR IDDE PROGRAM 11

What Is an Illicit Discharge? 11
What Are the Elements of an IDDE Program? 11
References: Chapter 1 12

2 DEVELOPING A STORM SEWER MAP 13

Conducting a Field Survey 13
Mapping Options 13
Figure 1: Sample Map 15
Prioritizing Areas to be Mapped 15
References: Chapter 2 16

3 PROHIBITING ILLICIT DISCHARGES 17

Illicit Discharge Ordinances 17
References: Chapter 3 18

4 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: LOCATING PRIORITY AREAS 19

Identifying Possible Hot Spots 19
Conducting Dry-Weather Outfall/Manhole Surveys 20
Conducting Water Quality Tests 22
Table 1: Water Quality Test Parameters and Uses 23
References: Chapter 4 24

5 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: TRACING THE SOURCE OF AN ILLICIT DISCHARGE 25

Manhole Observations 25
Video Inspection 26
Smoke Testing 26
Dye Testing 26
Aerial Infrared and Thermal Photography 27
Tracking Illegal Dumping 28
References: Chapter 5 29

6 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: REMOVING THE SOURCE OF AN ILLICIT DISCHARGE 31

Compliance Assistance and Enforcement for Illegal Connections to Homes and Businesses 31
Proper Construction and Maintenance of MS4s 33
Preventing and Responding to Illegal Dumping 34
References: Chapter 6 35

7 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: EVALUATION OF THE IDDE PROGRAM 37

Evaluation Strategy 37
References: Chapter 7 38

8 OUTREACH TO EMPLOYEES, BUSINESSES, AND THE GENERAL PUBLIC 39

Public Employees 39
Businesses 40
General Public 40
References: Chapter 8 41

9 BMPS AND MEASURABLE GOALS FOR IDDE 43

Getting Started 43
References: Chapter 9 45

10 RESOURCES 47

Web Sites and Publications 47
Contacts 51

APPENDIX A: MODEL ILLICIT DISCHARGE AND CONNECTION STORM WATER ORDINANCE 53

ACRONYMS

BMP	Best Management Practice
BWSC	Boston Water and Sewer Commission
GIS	Geographic Information System
GPS	Global Positioning System
IDDE	Illicit Discharge Detection and Elimination
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
SIC	Standard Industrial Classification

EPA	U.S. Environmental Protection Agency
CTDEP	Connecticut Department of Environmental Protection
MEDEP	Maine Department of Environmental Protection
MADEP	Massachusetts Department of Environmental Protection
NHDES	New Hampshire Department of Environmental Services
NYSDEC	New York State Department of Environmental Conservation
RIDEM	Rhode Island Department of Environmental Management
VTDEC	Vermont Department of Environmental Conservation

This page is intentionally blank.

INTRODUCTION

Although the quality of the nation's waters has improved greatly since the passage of the Clean Water Act in 1972, many water bodies are still impaired by pollution. According to the U.S. Environmental Protection Agency's (EPA's) 2000 National Water Quality Inventory, 39 percent of assessed river and stream miles, 46 percent of assessed lake acres, and 51 percent of assessed estuarine square miles do not meet water quality standards. The top causes of impairment include siltation, nutrients, bacteria, metals (primarily mercury), and oxygen-depleting substances. Polluted storm water runoff, including runoff from urban/suburban areas and construction sites, is a leading source of this impairment. To address this problem, EPA has put into place a program that regulates certain storm water discharges.

Polluted storm water runoff, including runoff from urban/suburban areas and construction sites, is a leading source of water quality impairment. To address this problem, EPA has put into place a program that regulates certain storm water discharges.

In 1990, EPA promulgated Phase I of its storm water program under the National Pollutant Discharge Elimination System (NPDES) permit provisions of the Clean Water Act. Phase I addressed storm water runoff from "medium" and "large" municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or greater, construction activity that would disturb five or more acres of land, and 10 categories of industrial activity. To further reduce the adverse effects of storm water runoff, EPA instituted its Storm Water Phase II Final Rule on December 8, 1999.

WHO ADMINISTERS THE PHASE II STORM WATER PROGRAM?

The Phase II storm water program is part of EPA's NPDES program, which in many states is delegated to state authorities to administer. Connecticut, Maine, New York, Rhode Island, and Vermont are authorized to serve as NPDES permitting authorities. EPA Region 1 serves as the permitting authority for Massachusetts and New Hampshire. EPA is also the permitting authority for all federally recognized Indian Country lands and for federal facilities in Massachusetts, New Hampshire, and Vermont.

WHAT IS REGULATED UNDER PHASE II?

Phase II regulates discharges from small MS4s located in "urbanized areas" (as delineated by the Census Bureau in the most recent census) and from additional small MS4s designated by the permitting authority. Phase II also regulates construction activities that would disturb between one and five acres of land. In addition, the Phase II Final Rule ends the temporary exemption from Phase I requirements for some municipally operated industrial activities[1] and revises the "no exposure" provision for Phase I-regulated industrial activities.

MS4s are typically operated by municipalities, but the Phase II definition of "municipal separate storm sewer systems" includes storm sewer systems owned or operated by other public bodies (e.g., states, counties, Indian tribes, departments of transportation, universities). EPA also notes that an MS4 is not always just a system of underground pipes; it can include roads with drainage systems, gutters, and ditches.

[1] This temporary exemption was provided by the Intermodal Surface Transportation Act (ISTEA) of 1991.

The rules for determining which small MS4s are regulated under Phase II are somewhat complex; MS4 operators should consult the NPDES permitting authority for their state to determine whether their MS4s are regulated. Note also that requirements may be different if a municipality is located only partially within an urbanized area.

WHERE DOES IDDE FIT IN?

EPA's Phase II rule specifies that permitting authorities must issue general permits for "automatically designated" small MS4s by December 9, 2002. The rule requires that operators of these automatically designated small MS4s apply for NPDES permit coverage within 90 days of permit issuance, and no later than March 10, 2003[2]. To obtain this coverage, an MS4 operator must develop, implement, and enforce a storm water management program that is designed to reduce the discharge of pollutants to the maximum extent practicable, protect water quality, and satisfy the applicable water quality requirements of the Clean Water Act. EPA's Storm Water Phase II Final Rule states that this storm water management program must include the following six minimum control measures:

- Public education and outreach on storm water impacts
- Public involvement and participation
- ➤ **Illicit discharge detection and elimination (IDDE)**
- Construction site storm water runoff control
- Post-construction storm water management in new development and redevelopment
- Pollution prevention and good housekeeping for municipal operations

As part of their applications for permit coverage, MS4 operators must identify the best management practices they will use to comply with each of the six minimum control measures and the measurable goals they have set for each measure.

ABOUT THIS MANUAL

This manual is intended to help municipalities in the New England states and New York develop illicit discharge detection and elimination (IDDE) programs required by EPA's Phase II storm water program. EPA's Phase II storm water regulations provide guidelines that are used by permitting authorities in writing their permits. This manual provides general information based on EPA's Phase II storm water regulations; it is important to consult the permitting authority in your state (see Chapter 10) to find out about state-specific requirements.

EPA's Phase II storm water regulations provide guidelines that are used by permitting authorities in writing their permits. This manual provides general information based on EPA's Phase II storm water regulations; it is important to consult the permitting authority in your state to find out about state-specific requirements.

Chapter 1 explains the IDDE requirement of EPA's Phase II regulations. Chapters 2 through 8 describe the required elements of an IDDE program and provide information to help municipalities execute each of these elements. Chapter 9 provides information on best management practices and measurable goals for IDDEs. Chapter 10 lists additional resources and contacts that may be helpful in developing an IDDE program.

[2] There are some exceptions to this deadline; contact the permitting authority in your state for up-to-date official information.

1 GETTING STARTED WITH YOUR IDDE PROGRAM

As you set out to develop your illicit discharge detection and elimination (IDDE) program, you will need to start by making sure that you know the answers to two key questions: (1) What is an illicit discharge? and (2) What are the required elements of an IDDE program? In this chapter we'll review the answers to these questions; we'll provide supporting information and details in subsequent chapters.

WHAT IS AN ILLICIT DISCHARGE?

The term "illicit discharge" is defined in EPA's Phase II storm water regulations as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to an NPDES permit and discharges resulting from fire-fighting activities."

Illicit discharges can be categorized as either direct or indirect.

- Examples of direct illicit discharges:
  - sanitary wastewater piping that is directly connected from a home to the storm sewer
  - materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin
  - a shop floor drain that is connected to the storm sewer
  - a cross-connection between the municipal sewer and storm sewer systems
- Examples of indirect illicit discharges:
  - an old and damaged sanitary sewer line that is leaking fluids into a cracked storm sewer line
  - a failing septic system that is leaking into a cracked storm sewer line or causing surface discharge into the storm sewer

Illicit discharge

Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to an NPDES permit and discharges resulting from fire-fighting activities.

WHAT ARE THE ELEMENTS OF AN IDDE PROGRAM?

EPA's Phase II regulations state that an IDDE program must incorporate the following four elements.

- Develop (if not already completed) a storm sewer system map showing the location of all outfalls, and the names and location of all waters of the United States that receive discharges from those outfalls.

NON-STORM WATER DISCHARGES THAT YOUR IDDE PROGRAM MAY NOT NEED TO ADDRESS

According to EPA's Phase II storm water regulations, an illicit discharge detection and elimination program need only address the following categories of non-storm water discharges if the operator of a small MS4 identifies them as significant contributors of pollutants to the MS4:

- water line flushing
- landscape irrigation
- diverted stream flows
- rising ground waters
- uncontaminated ground water infiltration
- uncontaminated pumped ground water
- discharges from potable water sources
- foundation drains
- air conditioning condensation
- irrigation water
- springs
- water from crawl space pumps
- footing drains
- lawn watering
- individual residential car washing
- flows from riparian habitats and wetlands
- dechlorinated swimming pool discharges
- street wash water

- To the extent allowable under state, tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the separate storm sewer system and implement appropriate enforcement procedures and actions as needed.
- Develop and implement a plan to detect and address illicit discharges, including illegal dumping, to the system.
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

For each of these mandatory elements, EPA suggests a variety of approaches that can help in creating a successful IDDE program. The mandatory elements and the suggested approaches will be discussed further in the next seven chapters.

REFERENCES: CHAPTER 1

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.5: *Illicit Discharge Detection and Elimination Minimum Control Measure.* EPA 833-F-00-007. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

2 DEVELOPING A STORM SEWER MAP

The creation of a storm sewer map is the first mandatory element of an IDDE program. Phase II requires that the operator of a regulated MS4 develop a map of the MS4 that shows, at a minimum, the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls. While many municipalities in the Northeast already have detailed maps of their storm sewer systems, others, typically those in older or more rural areas, have the information scattered in different locations. These municipalities will have the most work to do to comply with this requirement. If you need to develop a map, begin by collecting any existing information on outfall locations (e.g., review city records, drainage maps, storm drain maps, state or federal storm water permit files, state transportation maintenance maps), and then conduct field surveys to verify the locations.

CONDUCTING A FIELD SURVEY

A field survey of outfall locations will often be necessary to create a map or verify and update an existing map. The References section at the end of the chapter provides a Web link for a sample guide for conducting a storm drain mapping survey (MA DFWELE, 2002). Field outfall surveys generally include the following basic steps:

- Survey receiving waters on foot or by boat to look for all outfalls (i.e., wade small receiving waters or use a boat for larger receiving waters).
- Note the locations of outfalls on a map. The map scale should be such that outfalls can be located accurately.
- Assign a code or label to each outfall. Adopt a logical, easy-to-understand system (e.g., distance along the stream).
- Fill out a survey sheet for each outfall, noting characteristics such as dry weather discharge and deposits or stains.

The goal of a mapping program should be functionality—find a way to map outfalls such that you (and the permitting authority) can locate any specific outfall to check on discharges.

MAPPING OPTIONS

For municipalities that do not already have a storm sewer map, it is important to determine the type of map (e.g., topographic, hand or computer drafted) that best fits your needs. Because there is no specific mapping standard in the Phase II rule, the goal of a mapping program should be functionality—find a way to map outfalls such that you

CAN A DITCH BE AN OUTFALL?

The paragraph below is an excerpt from EPA's Storm Water Phase II Final Rule (USEPA, 1999).

The term "outfall" is defined in 40 CFR 122.26(b)(9) as "a point source at the point where a municipal separate storm sewer discharges to waters of the United States." The term "municipal separate storm sewer" is defined at 40 CFR 122.26(b)(8) as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)." Following the logic of these definitions, a "ditch" may be part of the municipal separate storm sewer, and at the point where the ditch discharges to waters of the United States, it is an outfall. As with any determination about jurisdictional provisions of the CWA, however, final decisions require case-specific evaluations of fact.

(and the permitting authority) can locate any specific outfall to check on discharges. The most basic way to meet the mapping requirement is to use an existing map (e.g., a topographic map) that shows receiving waters. You can then mark outfall locations on the map by hand (using existing information augmented by a field survey). Make sure the names of receiving waters are shown on the map; for receiving waters that don't have names, it is helpful to indicate the nearest named water body downstream. The graphic at the beginning of this chapter shows an example of a marked-up United States Geological Survey map (markings do not represent actual outfalls). The next step up is a more sophisticated paper map (e.g., blueprint-style). Figure 1 presents an example of a simple paper map showing outfalls and other key features of the storm sewer system.

In many municipalities, a paper map may be completely adequate for carrying out an IDDE program. However, if your MS4 has the resources, or if your municipality has a complex storm sewer system, you may want to make use of available computer technology in making your map.

Global Positioning System (GPS) technology can be used to obtain the coordinates (longitude and latitude) for each outfall. A GPS unit, which uses data from the U.S. Department of Defense's constellation of GPS satellites to constantly update position, can be carried with you on your field survey. A particular position can be recorded and later downloaded into a Geographic Information System (GIS) database. Using GIS, the coordinates can be linked with other site-specific information, such as a picture and history of the outfall. GPS units can be purchased or rented.

There are various computerized mapping programs. A GIS program (e.g., ArcGIS) combines a georeferenced database with mapping capability, so that different geographical attributes (e.g., streets, outfalls, land use, monitoring data) can be mapped as

"layers" and displayed either separately or together. AutoCAD®, a design/drafting platform, is another program commonly used for storm sewer mapping.

If you plan to map via computer, decide if you want to make the mapping system compatible with other departments within your municipality and/or with other data sources (e.g., state agencies that provide GIS layers). Since storm sewer systems are often constructed in roadways, the use of the GIS road line data layer can be helpful in developing a map. If this layer is available, it is usually very accurate and frequently updated by state or regional agencies. Local or regional planning commissions may be able to provide assistance with GIS technology and map development. Once a particular software system has been chosen, it is helpful to require developers to submit compatible electronic updates for subsequent development to ensure that the map and data remain current after the initial mapping effort is finished.

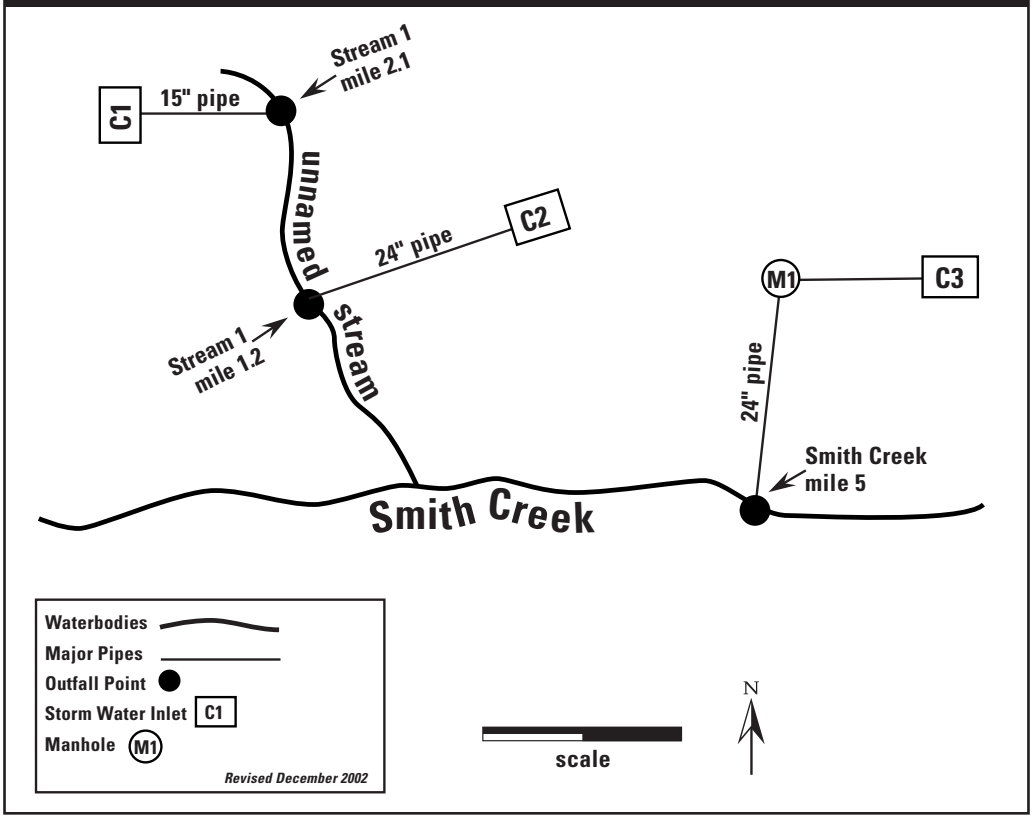
PRIORITIZING AREAS TO BE MAPPED

You may find that practical considerations will dictate the need to conduct mapping in phases. In this case, it is best to prioritize your mapping agenda. For example, older developed areas are more likely to have illicit discharges than newer areas for various reasons (e.g., many municipalities have imposed inspection requirements on new construction that help to prevent illegal connections). Therefore, if your community has limited resources, you would benefit from mapping the older areas first to ensure that priority areas are mapped.

You may find that practical considerations will dictate the need to conduct mapping in phases. In this case, it is best to prioritize your mapping agenda.

Other considerations in setting mapping priorities include land uses, reports of illicit discharges, and other information specific to each MS4. Although EPA's Phase II regulations require that only outfalls be mapped, once an illicit discharge is detected at an outfall, it may be necessary to map the portion of the storm sewer system leading to the outfall so that you are able to locate the source of the discharge. If possible, mapping the entire storm sewer system may prove very helpful to your IDDE program.

Figure 1 SAMPLE MAP



REFERENCES: CHAPTER 2

Colorado Department of Public Health and Environment, Water Quality Control Division. 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal stormwater discharge permit.* *http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html*

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. 2002. *Storm Drain Mapping Project Field Manual* (Draft). *http://www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

Oakland County, Michigan. 2002. *Illicit Discharge Elimination Program.* *http://www.co.oakland.mi.us/drain/program_service/illicit_disch.html*

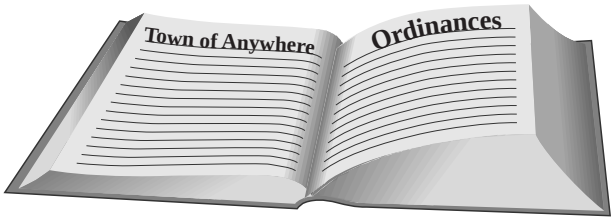
Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238. *http://www.epa.gov/clariton*

Rohrer, C.A., and Beckley, R.J. Undated. *Using GIS Tools to Implement an Illicit Discharge Elimination Program in Livonia, Michigan.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

3 PROHIBITING ILLICIT DISCHARGES

The second mandatory element of a Phase II IDDE program requires that MS4 operators "to the extent allowable under State, Tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the separate storm sewer system and implement appropriate enforcement procedures and actions as needed."



ILLICIT DISCHARGE ORDINANCES

As EPA's guidance specifies, a municipal ordinance created to comply with Phase II regulations must include a *prohibition* of illicit discharges and an *enforcement* mechanism. Note that it is also essential for the municipality to establish legal authority to inspect properties suspected of releasing contaminated discharges into the storm sewer system. Your municipality may already have a sewer use ordinance or similar bylaw that meets Phase II requirements, or that can be amended to meet the requirements. Consult with your town counsel and other municipal authorities to review your town's existing bylaws and regulations and determine what changes or additions are needed and what the procedure is for making those changes. If you need to make changes, you may want to review the model bylaws and other guidance discussed below.

EPA's nonpoint source pollution program Web site offers several examples of local ordinances for illicit discharges (USEPA, 2002). Appendix A of this manual presents EPA's general model ordinance, which synthesizes a number of existing municipal ordinances. In using any of these ordinances as a model, a community should take into account the legal authority granted to it under state law, the Phase II permit requirements in that state, the enforcement methods it deems appropriate, and any other locality-specific considerations.

A municipal ordinance created to comply with Phase II regulations must include a* prohibition *of illicit discharges and an* enforcement *mechanism.

A workgroup chaired by Massachusetts Department of Environmental Protection (MADEP) staff has been working on developing model bylaws that municipalities in the state can use to help them comply with Phase II regulations. The products of this group's work (model bylaws and associated guidance) are expected to be available on the MADEP Web site (see Chapter 10) by the time this manual is published. This group found that many of the available model ordinances did not fit well with the structure of Massachusetts government and, therefore, developed models that would work for towns in the state. The group also found that entry onto private property can be a tricky legal issue and should be treated carefully in any new or amended bylaws.

The Boston Water and Sewer Commission's (BWSC's) *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains* are available on the Web (*http://*www.bwsc.org; click on "Engineering" then "Regulations") and may serve as a useful local model. The regulations specify certain conditions under which BWSC

representatives must be granted access to property; denial of access may lead to termination of water service.

Note that illicit discharges to *storm* sewers should be addressed hand-in-hand with the issue of illegal connections of extraneous water to *sanitary* sewers (typically referred to as infiltration/inflow or I/I programs); bylaws or regulations should make clear which discharges belong in which system.

REFERENCES: CHAPTER 3

BWSC. 2002. *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains.* *http://www.bwsc.org*

Personal communication from Ginny Scarlet, MADEP, November 29, 2002.

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851.

USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* *http://www.epa.gov/owow/nps/ordinance/discharges.htm*

4 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: LOCATING PRIORITY AREAS

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: locating priority areas; tracing the source of an illicit discharge; removing the source of an illicit discharge; and program evaluation and assessment. The first component, locating priority areas, is the subject of this chapter. Each of the other three components will be discussed in chapters five, six, and seven respectively.

THE IDDE PLAN

- ➤ **Locating priority areas**
- **Tracing the source of an illicit discharge**
- **Removing the source of an illicit discharge**
- **Program evaluation and assessment**

The process of identifying "priority areas" can be broken down into three steps:

- ➤ ***Use available information to identify potential hot spots***
- ➤ ***Conduct dry-weather field screening to look for non-storm water discharges***
- ➤ ***Conduct water quality tests to see if these non-storm water discharges seem to be illicit discharges***

The following sections focus on each of these approaches.

IDENTIFYING POSSIBLE HOT SPOTS

"Hot spots" are areas that are considered to be likely sources of illicit discharges, based on available information. The following list provides examples of potential hot spots.

Commercial/ industrial areas These areas have been found in some communities' IDDE programs to (a) have significant numbers of illicit connections and/or (b) have discharges with a high potential to affect water quality (Tuomari, 1999 and Pitt et al., 1993). Specific business sectors can be prioritized (e.g., businesses subject to waste water pretreatment rules, businesses falling under certain Standard Industrial Classification [SIC] codes, or business sectors with a record of enforcement actions).

Older areas of town Older development may predate more stringent construction codes regarding illegal connections and may have deteriorating sewer and/or storm sewer infrastructure that can lead to infiltration problems.

Hot spots
Areas that are considered to be likely sources of illicit discharges, based on available information.

Areas where there have been repeated complaints Areas where illegal dumping or apparently contaminated discharges have been reported are obvious priority targets. Geographic Information System (GIS) mapping can be useful for visualizing complaint locations. These maps can be overlain with other pertinent resource information (e.g., locations of facilities that have had compliance violations, water quality data for receiving waters).

Locations identified from ambient water quality sampling data The locations of high levels of particular contaminants (e.g., bacteria) can help to target priority outfalls. Good resources for this information are the periodic water quality assessment reports ("305(b) reports") and lists of impaired waters ("303(d) lists") that the Clean Water Act requires each state to prepare and submit to EPA. These reports are prepared by each state's environmental agency and are available to the public, often on the state's Web site. Also, local watershed groups monitor many water bodies, particularly those in more developed areas. In addition to providing sampling data, these groups can often serve as valuable resources for information about a particular water body and potential problem areas. Other possible sources of water quality data include local Boards of Health (in Massachusetts, they must test at beaches) and water districts or departments.

CONDUCTING DRY-WEATHER OUTFALL/MANHOLE SURVEYS

Once your general geographic priority areas have been determined, dry-weather surveys of outfalls and/or manholes can be undertaken to look for non-storm water flows.

EPA recommends that you make visual observations of outfalls during dry weather. Some operators have found that dry-weather manhole inspections can also be useful. The presence of flow in a storm sewer outfall or manhole during dry weather indicates a likely illicit discharge. (Other explanations for the presence of such flow include infiltrating ground water or the diversion of a surface stream into the storm sewer system.) Because illicit discharges are often intermittent, you should ideally check for discharges multiple times in a given location (particularly in a priority location). Please note that only those with confined-space training should enter a manhole or outfall. The observation and sampling strategies described below can typically be conducted without entering manholes or outfalls.

IMPORTANT NOTE:
Only those with confined-space training should enter a manhole or outfall.

In implementing your dry-weather survey, consider adopting the following strategies.

- Combine this survey with the outfall mapping field survey (see Chapter 2) and/or water quality sampling of the discharges (discussed in the next section of this chapter).
- Enlist a watershed association or other volunteer organization to help with the outfall survey.
- Notify the public that the survey will be taking place (e.g., send notices to property owners in the area). Note that while it is desirable to keep the public informed

about the presence of survey-takers to prevent undue alarm, notification may also tip off an illegal discharger to curtail discharges; use your judgment as to the most appropriate course of action. For example, you might just specify a very general time frame during which the survey will take place.

- Keep safety considerations at the forefront of survey procedures at all times. Likely hazards should be anticipated and discussed with the individuals carrying out the survey, and individuals should be instructed to use their judgment and err on the side of caution as they conduct the survey. The survey should be conducted in groups of two or more. If manholes are opened for inspection as part of the survey, staff should wear high-visibility safety vests and block off their work area with traffic cones; police presence can be helpful for safety and to allay public concerns that can be created by individuals opening manholes.

- Determine your criterion for "dry weather." The working definition of dry weather used for sampling programs can vary depending on location-specific factors. Pitt et al. (1993) suggest that storm-runoff drainage ends in most urban areas no more than 12 hours after a storm event, but many programs (e.g., Boston, NH DES, San Diego) use a longer time period, such as no rain or no more than 1/10 inch of rain in the last 48 or 72 hours.

- Observe dry-weather flows for odor, color, turbidity, and floatable matter. Observe outfalls for deposits and stains, vegetation, and damage to outfall structures. This information can help identify contaminants present in the discharge and/or the likely nature of the discharge (e.g., sanitary, industrial). Some of the resources listed in Chapter 10 provide examples of data and observation sheets to be filled out for each outfall.

- Look up some of the resources listed in the references for this chapter for more detailed instructions for conducting dry-weather field surveys (e.g., MA DFWELE, 2002).

CASE STUDY: BOSTON WATER AND SEWER COMMISSION

USING SANDBAGS TO DETECT ILLICIT DISCHARGES

The Boston Water and Sewer Commission has had success using sandbags to help detect illicit discharges. Sandbags are placed in storm drain outlets that empty into manholes and/or water bodies. The sandbags are small enough that they do not block the storm drain outlet. They must be placed in the outlet after 48 hours of dry weather (1/10 inch of rain or less). After the bag is placed in the outlet, another 48 hours of dry weather is needed (total of 96 hours of dry weather). The outlet is then observed, and any water buildup behind the sandbag is sampled. This method is very effective in narrowing down the manhole junctures that contain illicit discharges. Sandbags cost approximately $60 each and can be reused. The main difficulty in using this method is the need for 96-hour periods of dry weather.

Information from an interview with Paul Barden, Deputy Director of Engineering Services, and Charlie Jewell, Project Director, Boston Water and Sewer Commission, August 15, 2002.

CONDUCTING WATER QUALITY TESTS

When dry-weather flow is observed, visual or odor observations (e.g., observation of pieces of toilet paper, strongly colored or very muddy discharge, or the odor of sewage or chemicals) may provide enough information to determine that the discharge is illicit and to identify the likely source. If not, water quality sampling can be used to determine whether the flow is likely to have resulted from an illicit discharge.

Certain water quality parameters can serve as indicators of the likely presence or absence of a specific type of discharge. Some of these parameters can be measured in the field with probes or test kits; others must be analyzed for in the laboratory. A wide variety of water quality parameters can be measured in an IDDE program, and many references exist that describe these parameters. Some of the more commonly used and useful parameters are summarized in Table 1, which focuses on parameters suggested in Pitt et al. (1993) and the subset of those recommended in EPA's Phase II regulations.

CASE STUDY: WINOOSKI, VERMONT

USE OF OPTICAL BRIGHTENERS

The city of Winooski, Vermont has found that testing for optical brighteners is an efficient, cheap way to determine the presence of a non-storm water discharge in a particular outfall. Optical brighteners are used in laundry detergents and thus serve as a marker for household or commercial laundry discharges. These tests are extremely sensitive to the presence of detergents.

To perform an optical-brightener test, an untreated cotton pad ($9/100 pads) surrounded by a mesh bag or a suet cage is placed in a storm drain outlet, manhole, or catch basin that has been found to have dry-weather discharge and left for a certain period of time (i.e., 5-7 days). The cotton pad is then brought back to the lab and placed under a UV lamp (approximately $200) in a dark room. A blue color indicates the presence of detergents, signifying either illegal dumping, a direct illicit connection, a leaking sewer, or leakage from a failed septic system. If the test is positive for detergents, further tests need to be performed to determine the source.

Information from an interview with Tim Grover, Water Pollution Control Facility Superintendent, City of Winooski, August 9, 2002.

TABLE 1 WATER QUALITY TEST PARAMETERS AND USES

Water Quality Test	Use of Water Quality Test	Comments
Conductivity	Used as an indicator of dissolved solids	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Typically measured in the field with a probe
Ammonia	High levels can be an indicator of the presence of sanitary wastewater	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Used very often and equipment is readily available; Boston, MA uses a field test kit (see case example)
Surfactants	Indicate the presence of detergent (e.g., laundry, car washing)	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Boston, MA uses a field test kit (see case example)
pH	Extreme pH values (low or high) may indicate commercial or industrial flows; not useful in determining the presence of sanitary wastewater (which, like uncontaminated baseflows, tends to have a neutral pH, i.e., close to 7)	- Pitt et al. 1993 suggested parameter; EPA Phase II regulations recommended parameter - Typically measured in the field or lab with a probe
Temperature	Sanitary wastewater and industrial cooling water can substantially influence outfall discharge temperatures. This measurement is most useful during cold weather.	- Pitt et al. 1993 suggested parameter - Measured in the field with a thermometer or probe
Hardness	Used to distinguish between natural and treated waters	- Pitt et al. 1993 suggested parameter
Total Chlorine	Used to indicate inflow from potable water sources; not a good indicator of sanitary wastewater because chlorine will not exist in a "free" state in water for long (it will combine with organic compounds)	- Pitt et al. 1993 suggested parameter
Fluoride	Used to indicate potable water sources in areas where water supplies are fluoridated	- Pitt et al. 1993 suggested parameter
Potassium	High levels may indicate the presence of sanitary wastewater	- Pitt et al. 1993 suggested parameter
Optical Brighteners (Fluorescence)	Used to indicate presence of laundry detergents (which often contain fabric whiteners, which cause substantial fluorescence)	-Pitt et al. 1993 suggested parameter -Used by City of Winooski, VT (see case example)
Bacteria (fecal coliform, *E. coli,* and/or *enterococci)*	Used to indicate the presence of sanitary wastewater	- Used by NHDES (see case example in chapter 5)

REFERENCES: CHAPTER 4

Clark County (WA) Public Works. 2000. *Illicit Discharge Screening Project: Annual Summary 2000.* *http://www.co.clark.wa.us/site/clean/download/2000rept.pdf*

Colorado Department of Public Health and Environment, Water Quality Control Division. October 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal storm water discharge permit.* *http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html*

Donlon, A. 2001. *2000 Coastal Illicit Connection Remediation Grant Program: Final Report.* New Hampshire Department of Environmental Services and New Hampshire Estuaries Project. R-WD-01-10. *http://www.des.state.nh.us/wmb/was/nhep2000.pdf*

Interview with Paul Barden and Charlie Jewell, BWSC, August 15, 2002.

Interview with Andrea Donlon, NHDES, July 29, 2002.

Interview with Tim Grover, City of Winooski, VT, August 9, 2002.

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* *http://www.wef.org*

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. *Storm Drain Mapping Project Field Manual* (Draft). January 2002. *www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238.

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

Sargent, D. and W. Castonguay. 1998. *An Optical Brightener Handbook.* *http://www.mvpc.org/services_sec/mass_bays/optical_handbook.htm*

Tuomari, D. 1999. *Dos and Don'ts on Implementing a Successful Illicit Connection Program.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851.

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Identifying Illicit Connections.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_2.cfm*

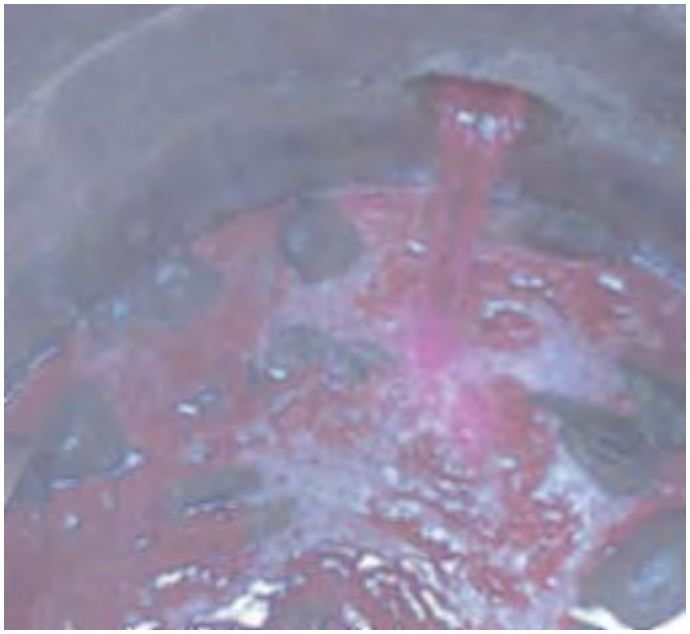
5 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: TRACING THE SOURCE OF AN ILLICIT DISCHARGE

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.

REFERENCES: CHAPTER 5

Center for Watershed Protection. *Pollution Prevention Fact Sheet: Illegal Dumping Control.* *http://www.stormwatercenter.net/Pollution_Prevention_Factsheets/IllegalDumpingControl.htm*

City of Cambridge, MA. 2002. *Cambridge Sewer and Stormwater Line Inspection and Testing Program.* *http://www.ci.cambridge.ma.us/~TheWorks/dye.html*

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* *http://www.wef.org*

Johnson, B. and D. Tuomari. 1998. *Did you know…The Impact of On-site Sewage Systems and Illicit Discharges on the Rouge River.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

Pierce County (WA) Public Works and Utilities. 2002. *BMP S.1: Eliminate Illicit Storm Drain Connections.* *http://www.co.pierce.wa.us/pc/services/home/environ/water/swm/sppman/bmps1.htm*

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

Town of Cary, NC. 2002. *Town of Cary Smoke Test.* *http://www.townofcary.org/smoke*

Tuomari, D. 1999. *Dos and Don'ts on Implementing a Successful Illicit Connection Program.* Rouge River Demonstration Project. *http://www.rougeriver.com/proddata*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Failing Septic Systems.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_1.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Identifying Illicit Connections.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_2.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Illegal Dumping.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_3.cfm*

USEPA Region 5. 1998. *Illegal Dumping Prevention Guidebook.* EPA905-B-97-001. Waste, Pesticides, and Toxics Division, Chicago, Illinois. *http://www.epa.gov/reg5rcra/wptdiv/illegal_dumping/*

This page is intentionally blank.

6 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: REMOVING THE SOURCE OF AN ILLICIT DISCHARGE

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: (1) locating priority areas; (2) tracing the source of an illicit discharge; (3) removing the source of an illicit discharge; and (4) program evaluation and assessment. The third component, removing the source of an illicit discharge, is the subject of this chapter.

THE IDDE PLAN

- Locating priority areas
- Tracing the source of an illicit discharge
- ➢ Removing the source of an illicit discharge
- Program evaluation and assessment

Because there are various sources of illicit discharges to the storm sewer system, there are different kinds of actions municipalities may have to take to remove those sources and prevent future illicit discharges. This section groups those actions into three categories: compliance assistance and enforcement for illegal connections to homes and businesses; proper construction and maintenance of MS4s; and responding to and preventing illegal dumping.

COMPLIANCE ASSISTANCE AND ENFORCEMENT FOR ILLEGAL CONNECTIONS TO HOMES AND BUSINESSES

There is a range of ways in which municipalities may wish to handle the removal of illegal connections between homes or businesses and the storm sewer system. Enforcement measures should be spelled out in the required IDDE ordinance (see Chapter 3), but the MS4 operator will normally be allowed to use judgment about what mix of compliance assistance and enforcement actions is appropriate in a given situation. Typically, a municipality responds to the discovery of an illegal connection in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Voluntary Compliance

Often, home or business owners are not aware of the existence of illegal connections between their buildings and the storm sewer systems. In these cases, providing the responsible party with information about the connection, its environmental consequences, the applicable regulations, and how to remedy it may be enough to secure vol-

untary compliance. The cost of removing the connection and reconnecting it to the sanitary sewer system can be an obstacle. Recognizing this, some localities (e.g., Boston and coastal New Hampshire) have chosen to provide assistance with these costs, using municipal public works funds or state or federal grants.

Typically, a municipality responds to the discovery of an illegal connection in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Enforcement

EPA's model illicit discharge ordinance (Appendix A) provides an example of the enforcement steps that might be specified in a typical local ordinance. These steps are summarized below.

- The authorized enforcement agency sends the property owner a Notice of Violation (NOV), which may require the violator to take steps such as monitoring, elimination of an illicit connection or discharge, or payment of a fine.
- The person receiving the NOV may appeal it.
- If the person receiving the NOV does not appeal or loses the appeal and fails to correct the violation, the enforcement agency may "take any and all measures necessary to abate the violation and/or restore the property." The agency then may require reimbursement from the violator for the cost of the abatement, including administrative costs.
- The authorized enforcement agency also has the ability to seek an injunction against the violator "restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation."

If the municipality has not yet obtained enforcement authority (e.g., because a local ordinance has not yet been passed), it may be possible for the municipality to seek enforcement action from state or federal authorities. Involvement of state or federal

CASE STUDY: WAYNE COUNTY, MICHIGAN

ENFORCEMENT PROCEDURE

Wayne County, Michigan, began its illicit discharge detection and elimination program by targeting certain industrial and commercial facilities for site inspections—starting at the other end of the pipe from the outfall survey approach. County personnel visited the facilities, dye tested a representative number of plumbing fixtures, and observed general "housekeeping" practices.

If no violations were found, a thank you letter was sent to the facility acknowledging staff participation and closing the file. If a facility was found to have an illicit connection, a violation letter was sent, giving the facility 30 to 90 days to correct it. If a facility failed to comply with the request, the municipal plumbing inspector or building department became involved. If the municipality was not able to gain compliance, the facility was referred to the Michigan Department of Environmental Quality. When an illicit connection was eliminated, the county provided confirmation. Once a correction was confirmed, a confirmation/thank you letter was sent to facility management, thanking them for their participation and closing the file.

Information from Tuomari, D. 1999. Dos and Don'ts on Implementing a Successful Illicit Connection Program. *Technical Report of the Rouge River Demonstration Project.* ***http://www.rougeriver.com/proddata***

CASE STUDY: ST. LOUIS, MISSOURI

ENFORCEMENT PROCEDURE

The Metropolitan St. Louis Sewer District has a comprehensive ordinance regulating users who discharge into the sanitary sewer and storm sewer systems. Upon discovery of a violation of this ordinance, the Sewer District notifies the user of the nature of the violation and directs that actions be taken to remedy the noncompliance. Within 30 days of receipt of the notice, the user must submit a plan for correction of the violation to the Sewer District. If a violation is found within the house or business that appears to present an immediate danger to human health or welfare, a verbal notification is given immediately by telephone or visit, directing the user to take immediate action to discontinue or reduce the discharge to safe levels. A written notice is sent within five days of the verbal notification.

The Sewer District has the power to issue the following Administrative Orders: Cease and Desist Order (directing the user to stop the violating action), Compliance Order (directing the user take action to correct violation), Show Cause Order (directing the user to show cause why a proposed enforcement action should not be taken), and Consent Order (establishing an agreement with a user to correct a violation).

If the violator does not take action within the time allotted, the Sewer District has the right to eliminate the illicit discharge at the expense of the violator. Legal actions can be taken against, and penalties imposed on, any violator that does not comply.

Information from Metropolitan St. Louis Sewer District Ordinance No. 8472, on EPA's nonpoint source pollution Web site at ***http://www.epa.gov/owow/nps/ordinance/discharges.htm***

authorities may also be necessary if the source of an illicit discharge is located outside of the municipality's boundaries. Examples of enforcement procedures implemented in Wayne County, Michigan, and St. Louis, Missouri, are included in this section.

PROPER CONSTRUCTION AND MAINTENANCE OF MS4s

Some illicit discharge problems may be the responsibility of the MS4 operator. These problems include cross-connections between the sanitary sewer and storm sewer systems and infiltration into damaged or deteriorating storm sewer pipes.

Cross-connections between a municipality's sanitary sewer and storm sewer systems may exist by mistake, because of deterioration over time, or as part of the design in an antiquated system. Complete and accurate maps of the sewer and storm sewer systems can help identify these cross-connections and prevent them during any new construction that takes place.

Contamination can infiltrate into a cracked or leaking MS4 from leaking sanitary sewer pipes, failing septic systems, or contaminated groundwater. To help prevent this, both MS4s and sanitary sewer systems should be inspected periodically and maintained properly to keep them in good repair.

PREVENTING AND RESPONDING TO ILLEGAL DUMPING

It is often difficult to identify and locate the individuals responsible for illegal dumping; therefore, a program to address illegal dumping should focus on prevention, backed up by enforcement to the extent possible.

EPA Region 5 has prepared an *Illegal Dumping Prevention Guidebook* that suggests the following key strategies that can be used to prevent illegal dumping.

- **Site maintenance and controls** Measures should be taken to clean up areas where illegal dumping has taken place, and controls such as signs or access restrictions should be used, as appropriate, to prevent further dumping.
- **Community outreach and involvement** Outreach is the linchpin of an illegal-dumping prevention program and can include the following components:
  - Educating businesses, municipal employees, and the general public about the environmental and legal consequences of illegally disposing of waste into the storm sewer system
  - Providing and publicizing ways for citizens to properly dispose of waste
  - Providing opportunities for citizens to get involved in preventing and reporting illegal dumping
- **Targeted enforcement** This strategy should include a prohibition against illegal dumping via ordinance or another similar measure, backed up by trained law-enforcement personnel and possibly field operations.
- **Program measurement** Tracking and evaluation methods should be used to measure the impact of illegal-dumping prevention efforts and determine whether goals are being met.

Although the EPA Region 5 guidebook is targeted more to land dumping of solid waste, these strategies can also be applied to illegal dumping into the storm drain system. Some specific methods that municipalities can use to implement these strategies include the following:

- **Site maintenance and controls**
  - Storm-drain stenciling program
  - Spill-response plans for hazardous-waste spills
- **Community outreach and involvement**
  - An illegal-dumping reporting hotline
  - Outreach to business sectors that handle hazardous materials and/or have a history of illegal-dumping problems; outreach should include information on Best Management Practices for spill prevention and proper waste disposal

- Printed outreach materials for the public
- Publicizing of waste-disposal options, such as used oil recycling and household hazardous waste collections

➤ **Targeted enforcement**

- An illegal-dumping ordinance (or section of IDDE ordinance)
- Surveillance of known illegal-dumping locations
- Business facility inspections
- Training of municipal employees, police officers, and other local entities to be on lookout

➤ **Program measurement**

- Tracking of incident locations
- Compilation of statistics (e.g., annual cleanup costs, facility compliance, arrests, convictions, fines, complaints)

REFERENCES: CHAPTER 6

California Coastal Commission. 2002. *Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities.* *http://www.coastal.ca.gov/la/murp.html*

Center for Watershed Protection. *Pollution Prevention Fact Sheet: Illegal Dumping Control.* *http://www.stormwatercenter.net/Pollution_Prevention_Factsheets/IllegalDumpingControl.htm*

Interview with Paul Barden and Charlie Jewell, BWSC, August 15, 2002.

Interview with Andrea Donlon, NHDES, July 29, 2002.

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.* *http://www.projectcleanwater.org/html/model_programs.html*

USEPA. 1997. *Guidance Manual for Implementing Municipal Storm Water Management Programs – Volume 1: Planning and Administration* (Draft). Office of Wastewater Management and Office of Research and Development. *http://www.epa.gov/npdes/pubs/owm0233.pdf*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2002. Storm Water Phase II Menu of BMPs - *Illicit Discharge Detection and Elimination: Illegal Dumping.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illi_3.cfm*

USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* *http://www.epa.gov/owow/nps/ordinance/discharges.htm*

This page is intentionally blank.

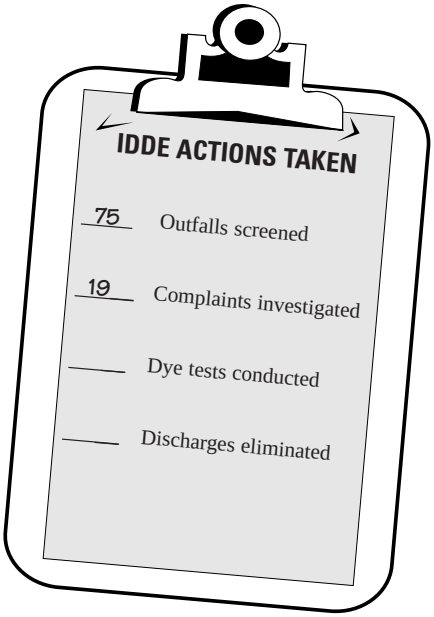
7 DEVELOPING AND IMPLEMENTING AN IDDE PLAN: EVALUATION OF THE IDDE PROGRAM

Developing and implementing a plan to detect and address illicit discharges is the third mandatory element of a Phase II IDDE program. EPA recommends that the plan include the following four components: (1) locating priority areas; (2) tracing the source of an illicit discharge; (3) removing the source of an illicit discharge; and (4) program evaluation and assessment. The fourth component, program evaluation and assessment, is the subject of this chapter.

THE IDDE PLAN

- Locating priority areas
- Tracing the source of an illicit discharge
- Removing the source of an illicit discharge
- ➤ Program evaluation and assessment

EPA recommends that the IDDE plan include procedures for program evaluation and assessment. Program evaluation is the time to step back, look at what has been done, determine what worked and what didn't, and make adjustments to planned future actions as appropriate. In this final component of your IDDE plan, you outline how you will go about evaluating your program.



EVALUATION STRATEGY

Evaluation procedures should include documentation of actions taken to locate and eliminate illicit discharges. Such documentation might include numbers of outfalls screened, complaints taken and investigated, feet of storm sewers videotaped, numbers of discharges eliminated, or number of dye or smoke tests conducted. Note that this component of the IDDE plan fits in with the overall Phase II requirements for identifying measurable goals for each Best Management Practice (BMP) and reporting on progress toward achieving those goals. (Chapter 9 discusses BMPs and measurable goals in more detail.) Annual reports are necessary during the first permit term (typically five years), and in years two and four in subsequent terms. (For more information on reporting requirements, see EPA's Fact Sheet 2.9.)

Evaluation procedures should include documentation of actions taken to locate and eliminate illicit discharges.

Determining the impact of these actions is more of a challenge, but it is an important part of the overall process because EPA allows for adjustments to the storm water management program over the life of the permit. Assessment of what worked and what didn't provides the information needed to make these adjustments to your IDDE program. EPA's Phase II regulations do not specify exactly how to evaluate your IDDE program, so check whether your permitting authority has made any particular specifications, and brainstorm from there.

Here are few suggestions for assessing the effectiveness of various IDDE strategies:

- Evaluate the number of possible illicit discharges that were detected using different detection methods. This can help you determine which detection methods are most effective.
- Evaluate the number of discharges and/or quantity of discharges eliminated using different possible enforcement and compliance measures.
- If you have access to monitoring data for receiving waters, evaluate changes in the water quality of receiving waters.
- Program evaluation might also include procedures for considering efficiency and feasibility. Questions you might want to ask include:
  - How much staff time and expense did it take to achieve a given result?
  - Were practical difficulties encountered with this approach? What were they, and how much of a problem did they present?

The strategies listed above are only suggestions. Because you are allowed a great deal of flexibility in determining what procedures you will use for program evaluation and assessment, you can decide what procedures will be most helpful in providing the information that you will need to move forward with your IDDE program.

REFERENCES: CHAPTER 7

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.9: *Permitting and Reporting: The Process and Requirements.* EPA 833-F-011. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA New England. 2002. *NPDES General Permit for Storm Water Discharges from Regulated Small Municipal Separate Storm Sewer Systems (MS4s*) (Draft). September 27, 2002. *http://www.epa.gov/region01/npdes/ms4.html*

8 OUTREACH TO EMPLOYEES, BUSINESSES, AND THE GENERAL PUBLIC

The fourth mandatory element of an IDDE program calls for the MS4 operator to "inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste." As noted in the Introduction, the requirement for public education and outreach on storm water impacts is also one of the six minimum control measures in the storm water management program. Therefore, fulfilling the outreach requirement for IDDE helps the MS4 to comply with this mandatory element; IDDE outreach can be integrated into the broader storm water outreach program.

Some suggestions for conducting IDDE outreach to the different community sectors are presented below. Many examples of storm water outreach materials, including some that are intended to be modified and used by anyone, are available on the Web; some useful Web sites are listed in Chapter 10. Operators of regulated small MS4s may want to work together with other operators in their area in developing outreach materials and campaigns to share ideas and save money.

PUBLIC EMPLOYEES

While it is clear that public works employees should receive specific technical training on the requirements of the IDDE program and the techniques that will be used to carry it out, other municipal departments should also be targeted for training.

A training program for municipal employees on pollution prevention techniques is required under the "Pollution Prevention/Good Housekeeping for Municipal Operations" minimum control measure. Preventing non-storm water discharges into the storm sewer system from municipal operations can be one part of this training.

Many public employees can play an important role as partners in the detection and/or prevention of illicit discharges.

Many public employees can play an important role as partners in the detection and/or prevention of illicit discharges. For example, highway department staff who maintain catch basins can look for signs of illicit discharges. Municipal building inspectors can help ensure that illegal connections to the storm sewer system do not take place in construction and renovation projects. Police officers, public works employees, and other municipal staff whose jobs keep them outside and mobile can help spot illegal dumpers. Fire and police department personnel who respond to hazardous material spills can help keep these spills out of the storm sewer system and adjacent water bodies.

BUSINESSES

Most businesses are willing to comply with environmental requirements and take proactive steps to prevent pollution if they understand the issues and the possible solutions. Here are some steps you can take to reach out to businesses.

Most businesses are willing to comply with environmental requirements and take proactive steps to prevent pollution if they understand the issues and the possible solutions.

- Create a general brochure and presentation to inform businesses about the IDDE program. This information can be presented and/or made available at Chamber of Commerce meetings and other business forums.
- Conduct compliance assistance outreach (e.g., visits, group training, and/or printed materials) for specific business types (e.g., auto repair shops, mobile carpet cleaning, restaurants).
- Provide contractors and developers with information on preventing illegal connections (in coordination with training on construction and post-construction storm water requirements).

GENERAL PUBLIC

There are many ways in which the general public can be made aware of environmental issues and the things they can do to help mitigate or prevent problems. Here are some things you can do to inform and involve the public.

- Work with citizen groups to conduct storm-drain stenciling (e.g., "Don't Dump – Drains to River") and outfall surveys.
  - In conducting these activities, you should:
    - Educate the groups about their activity (either informally or via a video or other presentation)
    - Make sure volunteers understand constraints associated with storm-drain stenciling activities (e.g., heavy traffic use areas, historic districts)
    - Have volunteers sign liability forms, if necessary
  - You may also wish to:
    - Publicize the activities through the media
    - Give volunteers brochures to hand out to the public with who they interact
    - Repeat stenciling periodically (due to paint wear off), unless placards are used—stenciling on curbs lasts longer than on street surfaces
    - See Chapter 10 for information on storm-drain stenciling resources

If made aware of environmental issues, the general public can help mitigate or prevent problems.

- Create a program to promote, publicize, and facilitate public reporting of illicit connections or discharges (e.g., a hotline). Some considerations in running a hotline include:
  - Callers should be able to at least leave a message at any time of day
  - It may be helpful to have the hotline staffed during business hours
  - A system should be created for monitoring the hotline so that staff can follow up quickly on reports of discharges

  - The municipality may wish to offer a small reward for callers that provide information leading to the detection of an illicit discharge source

- Distribute (by mail and by making available at various locations and events) printed outreach materials. A general flyer about illicit discharges might include information on the following:
  - Background information on water pollution
  - A definition of what constitutes an illicit discharge
  - Measures to prevent illicit discharges
  - Information about the municipality's illicit discharge ordinance
- Create Public Service Announcements for radio and/or television.
- Work with the local access cable station and local newspapers to develop features on illicit discharge prevention.
- Create and publicize a household hazardous waste disposal/recycling program.
- Provide classroom speakers and/or printed information for schools.

REFERENCES: CHAPTER 8

Chesterfield County (VA). Undated. *Household Guide to Chesterfield County's Illicit Discharge Ordinance.* *http://www.chesterfield.gov/CommunityDevelopment/Engineering/HouseholdFactSheet.pdf*

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide.* EPA 833-R-00-002. Office of Water. *http://www.epa.gov/npdes/pubs/comguide.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.3: *Public Education and Outreach Minimum Control Measure.* EPA 833-F-00-005. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.8: *Pollution Prevention/Good Housekeeping Minimum Control Measure*. EPA 833-F-00-010. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs – *Public Education and Outreach on Storm Water Impacts.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/pub_ed.cfm*

USEPA. 2002. Storm Water Phase II Menu of BMPs – *Public Education and Outreach on Storm Water Impacts: Proper Disposal of Household Hazardous Wastes.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/edu_5.cfm*

This page is intentionally blank.

9 BMPS AND MEASURABLE GOALS FOR IDDE

As mentioned in the Introduction, operators of regulated small MS4s generally must submit applications for Phase II storm water general permits by March 10, 2003. As part of their application, they must identify best management practices (BMPs) that they will use to comply with each of the six minimum control measures, and the measurable goals that they will use to demonstrate BMP implementation. Within the first permit term, the operators have to fully implement their storm water management programs.

GETTING STARTED

EPA allows MS4 operators a great deal of flexibility in determining what BMPs are most appropriate for their storm water programs. The agency has developed the following materials to assist operators in identifying appropriate BMPs:

- A *National Menu of Best Management Practices for Storm Water Phase II*, which includes a toolkit of example BMPs for each of the Phase II minimum control measures (available on the Web)
- *Measurable Goals Guidance for Small MS4s*
- A *Storm Water Phase II Compliance Guide*, which offers examples of BMPs and measurable goals for each of the six minimum measures

EPA allows MS4 operators a great deal of flexibility in determining what BMPs are most appropriate for their storm water programs.

Others, including states, regional agencies, trade associations, and non-profit organizations have also developed BMP information.

A sample list of IDDE BMPs and measurable goals is presented below. This list draws from BMP and measurable goal recommendations that have been offered by EPA and others. The list has not been officially endorsed by EPA or state agencies; it is intended to serve as a starting point to help municipalities think about the BMPs and measurable goals that are appropriate to their IDDE programs. BMPs are listed in bold, followed by the measurable goals for each BMP. (The BMPs are organized according to the four elements required in an IDDE program.)

STORM SEWER MAP

- **Create a storm sewer map**
  - Map a certain percentage of outfalls (adding up to 100% by the end of the permit term) or of the area of the town

ORDINANCE

➤ Pass an illicit discharge ordinance

- Draft an IDDE ordinance (or storm water ordinance with IDDE component) or an amendment to existing bylaws
- Pass an ordinance or amendment

IDDE PLAN

➤ Prepare an IDDE plan

- Complete a final plan and obtain the signature of the person overseeing the plan

➤ Conduct dry weather field screening of outfalls

- Screen a certain percentage of outfalls (adding up to 100% by the end of the permit term)

➤ Trace the source of potential illicit discharges

- Trace the source of a certain percentage of continuous flows (adding up to 100% by the end of the permit term)
- Trace the source of a certain percentage of intermittent flows and illegal dumping reports (100% may never be an achievable goal in this case)

➤ Eliminate illicit discharges

- Eliminate a certain number of discharges and/or a certain volume of flow, or a certain percentage of discharges whose source is identified (adding up to 100% by the end of the permit term)

OUTREACH

➤ Implement and publicize a household hazardous waste collection program

- Hold a periodic (e.g., annual) hazardous waste collection day
- Mail flyers about the hazardous waste collection program to all town residences

➤ Create and distribute an informational flyer for homeowners about IDDE

- Mail the flyer to town residences
- Print the flyer as a doorknob hanger and have water-meter readers distribute it

➤ Create and distribute an informational flyer for businesses about IDDE

- Mail the flyer to targeted businesses

➤ Work with community groups to stencil storm drains

- Stencil a certain percentage of drains

➤ **Create and publicize an illicit discharge reporting hotline**

- Put the hotline in place
- Include an announcement of the hotline in sewer bills
- Follow up on all hotline reports within 48 hours

REFERENCES: CHAPTER 9

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.* *http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html*

USEPA. 1999. National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. *Federal Register* Vol. 64 No. 235 (December 8, 1999), pp. 68722-68851. *http://www.epa.gov/npdes/regulations/phase2.pdf*

USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide.* EPA 833-R-00-002. Office of Water. *http://www.epa.gov/npdes/pubs/comguide.pdf*

USEPA. 2000. EPA Storm Water Phase II Final Rule Fact Sheet 2.9: *Permitting and Reporting: The Process and Requirements.* EPA 833-F-011. January 2000. *http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm*

USEPA. 2002. *National Menu of Best Management Practices for Storm Water Phase II.* *http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm*

USEPA. 2002. *Measurable Goals Guidance for Phase II Small MS4s.* *http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm*

This page is intentionally blank.

10 RESOURCES

WEB SITES AND PUBLICATIONS

Key Information Available on EPA's Storm Water Web Site

Entry Point and General Information
http://www.epa.gov/npdes
→ click on "Storm Water"
→ click on "Municipal Separate Storm Sewer Systems" or "Phase II"

Storm Water Phase II Final Rule
http://www.epa.gov/npdes/regulations/phase2.pdf
IDDE section of the Phase II Final Rule: see section II(H)(3)(b)(iii), pp. 68756-68758.

EPA's Fact Sheet Series
http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm

Overview
1.0 *Storm Water Phase II Final Rule: An Overview*

Small MS4 Program
2.0 *Small MS4 Storm Water Program Overview*
2.1 *Who's Covered? Designation and Waivers of Small Regulated MS4s*
2.2 *Urbanized Areas: Definition and Description*

Minimum Control Measures
2.3 *Public Education and Outreach*
2.4 *Public Participation/Involvement*
2.5 *Illicit Discharge Detection and Elimination*
2.6 *Construction Site Runoff Control*
2.7 *Post-Construction Runoff Control*
2.8 *Pollution Prevention/Good Housekeeping*
2.9 *Permitting and Reporting: The Process and Requirements*
2.10 *Federal and State-Operated MS4s: Program Implementation*

Construction Program
3.0 *Construction Program Overview*
3.1 *Construction Rainfall Erosivity Waiver*

Industrial "No Exposure"
4.0 *Conditional No Exposure Exclusion for Industrial Activity*

Documents
Storm Water Phase II Compliance Assistance Guide
http://www.epa.gov/npdes/pubs/comguide.pdf

National Menu of BMPs for Storm Water Phase II
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm

Measurable Goals Guidance for Phase II Small MS4s
http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm

Storm Water Web Sites

The Rouge River National Wet Weather Demonstration Project
http://www.rougeriver.com
(See specific information on IDDE at http://www.rougeriver.com/techtop/illicit/overview.html .)

Center for Watershed Protection's Storm Water Manager's Resource Center
http://www.stormwatercenter.net

The University of Tennessee's Municipal Technical Advisory Service NPDES Phase II Storm Water Management BMP Toolkit
http://www.mtas.utk.edu/bmptoolkit.htm
The Illicit Discharge section provides a number of useful web links and downloadable PDFs.

Organization Web Sites

Water Environment Federation
http://www.wef.org

American Public Works Association
http://www.apwa.net

Local Government Environmental Assistance Network
http://www.lgean.org

Center for Watershed Protection
http://www.cwp.org

The Boston Water and Sewer Commission
(the Web site includes the BWSC's regulations, outreach information, and other useful items)
http://www.bwsc.org

Storm Water Manuals

California Coastal Commission. 2002. *Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities.* *http://www.coastal.ca.gov/la/murp.html*

Colorado Department of Public Health and Environment, Water Quality Control Division. October 2001. *Colorado's Phase II Municipal Guidance: A guide to application requirements and program development for coverage under Colorado's Phase II municipal stormwater discharge permit.*
http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html

IDDE Manuals

San Diego Stormwater Copermittees Jurisdictional Urban Runoff Management Program. 2001. *Illicit Connection/Illicit Discharge (IC/ID) Detection and Elimination Model Program Guidance.*
http://www.projectcleanwater.org/html/model_programs.html

Pitt, R., M. Lalor, R. Field, D.D. Adrian, and D. Barbe. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide.* USEPA Office of Research and Development. EPA/600/R-92/238. (Available on the Web via EPA's National Environmental Publications Information System, *http://www.epa.gov/clariton*.)

North Central Texas Council of Governments. 2002. *Storm Water Management in North Central Texas: Illicit Discharge Detection and Elimination.*
http://www.dfwstormwater.com/Storm_Water_BMPs/illicit.html

Information on Specific Topics

Ordinances

USEPA's Model Ordinances to Protect Local Resources: Illicit Discharges.
http://www.epa.gov/owow/nps/ordinance/discharges.htm
(The same information can be found at *http://www.stormwatercenter.net.*)

Boston Water and Sewer Commission's *Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains. http://www.bwsc.org*

The Massachusetts Citizen Planner Training Collaborative offers "Tips on Drafting Bylaws" for Massachusetts municipalities: *http://www.umass.edu/masscptc/Tips_on_Drafting.html*

Optical Brighteners

Sargent, D. and W. Castonguay. 1998. *An Optical Brightener Handbook.* Available at:
http://www.mvpc.org/services_sec/mass_bays/optical_handbook.htm and
http://www.naturecompass.org/8tb/sampling/

Dye Testing

Dye supplier used by a reviewer of this manual: NORLAB, Inc., Amherst, OH. 1-800-247-9422;
http://www.norlabdyes.com

Smoke Testing

Smoke testing equipment supplier used by a reviewer of this manual: Hurco Technologies, Inc., 1-800-888-1436;
http://www.hurcotech.com

Outfall/Manhole Surveys

Massachusetts Division of Fisheries, Wildlife, and Environmental Law Enforcement. Storm Drain Mapping Project Field Manual (Draft). January 2002. *http://www.state.ma.us/dfwele/River/pdf/rivstormdrainmanual.pdf*

Jewell, C. 2001. A Systematic Methodology for Identification and Remediation of Illegal Connections. Presented at the Water Environment Federation Specialty Conference *2001 A Collection Systems Odyssey: Combining Wet Weather and O&M Solutions.* (Available for purchase via the WEF Web site, *http://www.wef.org*.)

Outreach

- **Household Hazardous Waste Collection**
  Household hazardous waste collection days in New Hampshire can be viewed online at *http://www.des.state.nh.us/hhw/hhwevent.htm.*

  Environmental Depot, Burlington VT. *http://www.cswd.net/facilities/hazardous_waste.shtml*

- **Storm-Drain Stenciling**
  Earthwater Stencils, an organization that does storm drain stenciling: *http://www.earthwater-stencils.com/*

  The Ocean Conservancy's Storm Drain Sentries program has a goal of having volunteers stencil one million storm drains with educational pollution prevention messages. The Ocean Conservancy supplies volunteers with a fact sheet about nonpoint source pollution, tips on conducting a stenciling project, and stencils for volunteer organizations to use. In return, stenciling project leaders are asked to submit data about the number of storm drains they stenciled, the types of pollutants found near the storm drains, and potential pollutant sources. This information is added to a growing database maintained by the Ocean Conservancy. Contact the Ocean Conservancy's Office of Pollution Prevention and Monitoring at 757-496-0920 or *stormdrain@oceanconservancyva.org.*
  http://www.oceanconservancy.org/dynamic/getInvolved/events/sentries/sentries.htm

  Resources for storm drain stenciling programs in New Hampshire:

  - Coordinated by Julia Peterson of UNH-Cooperative Extension in the coastal watershed *http://ceinfo.unh.edu/Common/Documents/gsc5401.htm*. Also described at *http://www.seagrant.unh.edu/extension.htm*
  - Coordinated by the NH Coastal Program (part of the Office of State Planning) *http://www.state.nh.us/coastal/CoastalEducation/marinedebris.htm*
  - Description of Manchester's storm drain stenciling on EPA's Web site describing the SEPP *http://www.epa.gov/region1/eco/csoman/sepp.html* (See #1 and #6)

- **Outreach Materials**
  EPA is preparing educational materials on different water topics each month as part of the year-long celebration of the 30th anniversary of the Clean Water Act. April 2003 will be Storm Water Month. The public education kit is expected to include:

  - General Storm Water Awareness brochure
  - Homeowner Guide (car washing, vehicle fluids changing, lawn & garden care, pet waste, septic system management)
  - Small Construction Guide poster
  - Press release
  - Public service announcement for the radio
  - Stickers
  - Door hanger with illicit discharge message
  - PowerPoint presentation

  These items will be available for download or order on EPA's Year of Clean Water Web site, *http://www.epa.gov/water/yearofcleanwater/month.html*. Before the materials are available on the Web site, you can contact EPA's contractor, TetraTech, to be on the mailing list for the materials.
  Email Kathryn Phillips at *tetratech1@earthlink.net* or *kathryn.phillips@tetratech-ffx.com.*

CONTACTS

USEPA-New England is the NPDES permitting authority for Massachusetts and New Hampshire. The other five NEIWPCC member states serve as NPDES permitting authorities for the storm water program. Contact information below was taken from the EPA-New England Web site *http://www.epa.gov/region01/npdes/stormwater/administration.html*, the EPA NPDES Web site *http://www.epa.gov/npdes*, and the New York State Department of Environmental Conservation Web site *http://www.dec.state.ny.us*.

U.S. EPA

EPA Region 1, New England
Regional Storm Water Coordinator
Thelma Murphy 617-918-1615; *murphy.thelma@epa.gov*

Regional Storm Water Assistance Team
Ann Herrick 617-918-1560; *herrick.ann@epa.gov*
Shelly Puleo 617-918-1545; *puleo.shelly@epa.gov*
Olga Vergara 617-918-1519, *vergara.olga@epa.gov*

Massachusetts Assistance
Dave Gray 617-918-1577; *gray.davidj@epa.gov*

EPA Region 2
Regional Storm Water Coordinator
Karen O'Brien 212-637-3717; *obrien.karen@epa.gov*

STATES

Connecticut
Connecticut Department of Environmental Protection
Bureau of Water Management
Permitting, Enforcement, and Remediation Division
http://www.dep.state.ct.us

Contact: Chris Stone 860-424-3850; *chris.stone@po.state.ct.us*

Maine
Maine Department of Environmental Protection
Bureau of Land and Water Quality
http://www.state.me.us/dep/blwq/stormwtr/index.htm

Contact: David Ladd 207-287-5404; *david.ladd@state.me.us*

Massachusetts
Massachusetts Department of Environmental Protection
Division of Watershed Management
http://www.state.ma.us/dep/brp/stormwtr/stormhom.htm

Contacts: Ginny Scarlet 508-767-2797; *ginny.scarlet@state.ma.us*
Linda Domizio 508-849-4005; *linda.domizio@state.ma.us*

New Hampshire
New Hampshire Department of Environmental Services
Storm Water Fact Sheet: *http://www.des.state.nh.us/factsheets/wwt/web-8.htm*
Storm Water Web Site: *http://www.des.state.nh.us/StormWater*
Contacts: Jeff Andrews 603-271-2984
Public Information and Permitting Office 603-271-2975

New York
New York State Department of Environmental Conservation
Division of Water
http://www.dec.state.ny.us/website/dow/mainpage.htm
Contact: Mike Rafferty 518-402-8094; *mrraffer@gw.dec.state.ny.us*

Rhode Island
Rhode Island Department of Environmental Management
Water Resources – Permitting
http://www.state.ri.us/dem/programs/benviron/water/permits/ripdes/stwater/index.htm
Contacts: Margarita Chatterton 401-222-4700 x7605; *mchatter@dem.state.ri.us*
Greg Goblick 401-222-4700 x7265; *ggoblick@dem.state.ri.us*

Vermont
Vermont Department of Environmental Conservation
Water Quality Division
http://www.anr.state.vt.us/dec/waterq/stormwater.htm
Contact: Peter LaFlamme 802-241-3765; *petel@dec.anr.state.vt.us*

APPENDIX A

Model Illicit Discharge and Connection Stormwater Ordinance[1]

ORDINANCE NO. _____

SECTION 1. PURPOSE/INTENT.

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of (_____) through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

1)To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user

(2) To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system

(3) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance

SECTION 2. DEFINITIONS.

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

Authorized Enforcement Agency: employees or designees of the director of the municipal agency designated to enforce this ordinance.

Best Management Practices (BMPs): schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Activities subject to NPDES Construction Permits. Currently these include construction projects resulting in land disturbance of 5 acres or more. Beginning in March 2003, NPDES Storm Water Phase II permits will be required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section X of this ordinance.

Illicit Connections. An illicit connection is defined as either of the following:

---

[1] USEPA. 2002. *Model Ordinances to Protect Local Resources: Illicit Discharges.* http://www.epa.gov/owow/nps/ordinance/discharges.htm

Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or,
Any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.
Industrial Activity. Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).
National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit. means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.
Non-Storm Water Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.
Person. means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.
Pollutant. Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
Premises. Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.
Storm Drainage System. Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.
Storm Water. Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.
Stormwater Pollution Prevention Plan. A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.
Wastewater means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

SECTION 3. APPLICABILITY.
This ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

SECTION 4. RESPONSIBILITY FOR ADMINISTRATION.
The_____ [authorized enforcement agency] shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Director of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the agency.

SECTION 5. SEVERABILITY.
The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

SECTION 6. ULTIMATE RESPONSIBILITY.

The standards set forth herein and promulgated pursuant to this ordinance are minimum standards; therefore this ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

SECTION 7. DISCHARGE PROHIBITIONS.

Prohibition of Illegal Discharges.

No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

(1) The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), fire fighting activities, and any other water source not containing Pollutants.

(2) Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety.

(3) Dye testing is an allowable discharge, but requires a verbal notification to the authorized enforcement agency prior to the time of the test.

(4) The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

Prohibition of Illicit Connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

SECTION 8. SUSPENSION OF MS4 ACCESS.

Suspension due to Illicit Discharges in Emergency Situations

The _____ [authorized enforcement agency] may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the United States, or to minimize danger to persons.

Suspension due to the Detection of Illicit Discharge

Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such

termination would abate or reduce an illicit discharge. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for a reconsideration and hearing.

A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the authorized enforcement agency.

SECTION 9. INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the _____ [authorized enforcement agency] prior to the allowing of discharges to the MS4.

SECTION 10. MONITORING OF DISCHARGES.

1. Applicability.
   This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

2. Access to Facilities.

(1) The_____ [authorized enforcement agency] shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

(3) Facility operators shall allow the _____[authorized enforcement agency] ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(3) The _____ [authorized enforcement agency] shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's storm water discharge.

(4) The _____ [authorized enforcement agency] has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the [authorized enforcement agency] and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(6) Unreasonable delays in allowing the _____ [authorized enforcement agency] access to a permitted facility is a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.

(7) If the _____ [authorized enforcement agency] has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction.

SECTION 11. REQUIREMENT TO PREVENT, CONTROL, AND REDUCE STORM WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.

[Authorized enforcement agency] will adopt requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the U.S. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPP) as necessary for compliance with requirements of the NPDES permit.

SECTION 12. WATERCOURSE PROTECTION.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

SECTION 13. NOTIFICATION OF SPILLS.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the U.S. said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the _____ [authorized enforcement agency] within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

SECTION 14. ENFORCEMENT.

1. Notice of Violation.
   Whenever the _____ [authorized enforcement agency] finds that a

person has violated a prohibition or failed to meet a requirement of this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
(a) The performance of monitoring, analyses, and reporting;
(b) The elimination of illicit connections or discharges;
(c) That violating discharges, practices, or operations shall cease and desist;
(d) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and
(e) Payment of a fine to cover administrative and remediation costs; and
(f) The implementation of source control or treatment BMPs.
If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

SECTION 15. APPEAL OF NOTICE OF VIOLATION.
Any person receiving a Notice of Violation may appeal the determination of the authorized enforcement agency. The notice of appeal must be received within _ days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or his/her designee shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the municipal authority or their designee shall be final.

SECTION 16. ENFORCEMENT MEASURES AFTER APPEAL.
If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or , in the event of an appeal, within __ days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

SECTION 17. COST OF ABATEMENT OF THE VIOLATION.
Within __ days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within __ days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.
Any person violating any of the provisions of this article shall become liable to the city by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of __ percent per annum shall be assessed on the balance beginning on the _st day following discovery of the violation.

SECTION 18. INJUNCTIVE RELIEF.
It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this ordinance, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

SECTION 19. COMPENSATORY ACTION.
In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the authorized enforcement agency may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

SECTION 20. VIOLATIONS DEEMED A PUBLIC NUISANCE.

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

SECTION 21. CRIMINAL PROSECUTION.

Any person that has violated or continues to violate this ordinance shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty of _____ dollars per violation per day and/or imprisonment for a period of time not to exceed ____ days.

The authorized enforcement agency may recover all attorney's fees court costs and other expenses associated with enforcement of this ordinance, including sampling and monitoring expenses.

SECTION 22. REMEDIES NOT EXCLUSIVE.

The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

SECTION 23. ADOPTION OF ORDINANCE.

This ordinance shall be in full force and effect __ days after its final passage and adoption. All prior ordinances and parts of ordinances in conflict with this ordinance are hereby repealed.

PASSED AND ADOPTED this ____ day of _____, 19__, by the following vote:

ENVIRONMENTAL PARTNERS

— An Apex Company —

1900 Crown Colony Drive, Suite 402

Quincy, MA 02169

P: 617.657.0200 F: 617.657.0201

envpartners.com

APPENDIX M

Stormwater Pollution Prevention Plans (SWPPPs)

Stormwater Site Observation Report

General Information			
Facility Name	Rockland Highway Department		
Date of Observation	November 4, 2022	**Start/End Time**	9:45-10:30 AM
Inspector's Name(s)	Vern S. Lincoln		
Inspector's Title(s)	Senior Project Scientist		
Inspector's Contact Information	vsl@envpartners.com		
Inspector's Qualifications	MS4 Consultant		

Weather Information

Weather at time of this observation?
☒ Clear ❑ Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds
❑ Other: Temperature: 60°F

Have any previously unidentified discharges of pollutants occurred since the last observation? ❑Yes ☒No
If yes, describe: N/A

Are there any discharges occurring at the time of observation? ❑ 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 observations. 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	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
2	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
3	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
4	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
5	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
6	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
7	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair	

ENVIRONMENTAL PARTNERS
An Apex Company

	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)
			❑ Replacement	
8	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
9	Outfall	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
10	Outlet	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
11	BMP	☒Yes ❑No	☒ Maintenance ❑ Repair ❑ Replacement	BMP should be cleared of debris/trash and vegetation removed if not designed.

Areas of Materials or Activities exposed to stormwater
Below are some general areas that should be assessed during routine observations. 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	
10	**Other significant material storage**	☒Yes ❑No ❑ N/A	☒Yes ❑No	

ENVIRONMENTAL PARTNERS
An Apex Company

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Prevention or treatment of sediment and erosion from non-paved areas into catch basins should be considered.

Additional Control Measures

Describe any additional control measures or changes to the SWPPP needed to comply with the permit requirements:

N/A

Notes

Use this space for any additional notes or observations from the observation:

The Highway Department is planning on upgrading their fueling island, which will include improved stormwater controls.

BMP added across from Maintenance Garages.

The rear of the property is planned to be paved soon. Prevention of dust generation and vehicle tracking will be aided by paving the rear of the property next year. A BMP installed at the end of the stormwater water system would help treat stormwater of sediment and nutrient prior to being discharged to the stream.

Print inspector name and title: Vern S. Lincoln, Senior Project Scientist - EP

Signature: _____ **Date: 11/04/22**

ENVIRONMENTAL PARTNERS
An Apex Company

Stormwater Site Observation Report

General Information			
Facility Name	Rockland Recycling Center		
Date of Observation	November 4, 2022	**Start/End Time**	10:30 – 11:30 AM
Inspector's Name(s)	Vern S. Lincoln		
Inspector's Title(s)	Senior Project Scientist		
Inspector's Contact Information	vsl@envpartners.com		
Inspector's Qualifications	MS4 Consultant		

Weather Information

Weather at time of this observation?
☒ Clear ❑ Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds
❑ Other: Temperature: 60°F

Have any previously unidentified discharges of pollutants occurred since the last observation? ❑Yes ☒No
If yes, describe: N/A

Are there any discharges occurring at the time of observation? ❑ 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 observations. 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	Swale	☒Yes ❑No	☒ Maintenance ❑ Repair ❑ Replacement	Clear vegetation in swale.
2	Inlet (of culvert #2 from swale)	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
3	Outlet (of culvert #2 to woods)	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
4	Outlet (of underdrain to swale)	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
5	Underdrain	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
6	Outlet (to woods)	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

ENVIRONMENTAL PARTNERS
An Apex Company

	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	Catch basin (under cardboard container crate)	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
8	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
9	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
10	Catch Basin	☒Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

Areas of Materials or Activities exposed to stormwater

Below are some general areas that should be assessed during routine observations. 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	
10	**Other significant material storage**	☒Yes ❑No ❑ N/A	☒Yes ❑No	

ENVIRONMENTAL PARTNERS
An Apex Company

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

No incidents of non-compliance.

Additional Control Measures

Describe any additional control measures or changes to the SWPPP needed to comply with the permit requirements:

Multiple catch basins were added to the access road since last visit; the SWPPP should be updated.

Notes

Use this space for any additional notes or observations from the observation:

The Town paved the access road since last SWPPP site visit as part of the larger drainage improvement project. The structure and form of the swale has also been improved. Additional catch basins have been installed along the access road that drain to the underdrain. Overall, the Town has made significant strides in improving stormwater management at this facility in 2021.

Site plans should be reviewed and GIS needs to be updated to reflect upgrades to stormwater system.

Print inspector name and title: Vern S. Lincoln, Senior Project Scientist - EP

Signature: **Date: 11/04/22**

ENVIRONMENTAL PARTNERS
An Apex Company

APPENDIX N

Municipal Facility Audit Report

ENVIRONMENTAL PARTNERS

September 15, 2020

Mr. Dave Taylor Jr.
Highway Superintendent
Town of Rockland
841 Market Street
Rockland, MA 02370

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

Dear Mr. Taylor,

In accordance with our July 2019 Contract Agreement for professional engineering services, Environmental Partners (EP) is forwarding this report on our audit of municipal facilities for compliance with the Town of Rockland'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 August 19th and 31st, EP staff performed facility audits at fourteen (14) municipal facilities owned and operated by the Town of Rockland. These facilities include:

- Rockland Community Center
- R. Stewart Esten Elementary School
- Fire Department
- Rockland Senior High School
- Highway Department
- Jefferson Elementary School
- Rockland Memorial Library
- Memorial Park Elementary School
- Police Department
- Robert J. Nyman Rockland Senior Center
- Sewer Department
- Town Hall
- Recycling Center
- Abington & Rockland Joint Water Department

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 at the Highway Department was the only interior space thoroughly audited.

The municipal facilities audited in the Town of Rockland 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 Rockland on this project. Should you have any questions or require additional information, please do not hesitate to us.

Sincerely,

Environmental Partners Group, Inc.
Scott D. Turner, PE, AICP, LEED AP ND
Director of Planning
P: 617.657.0280
E: sdt@envpartners.com

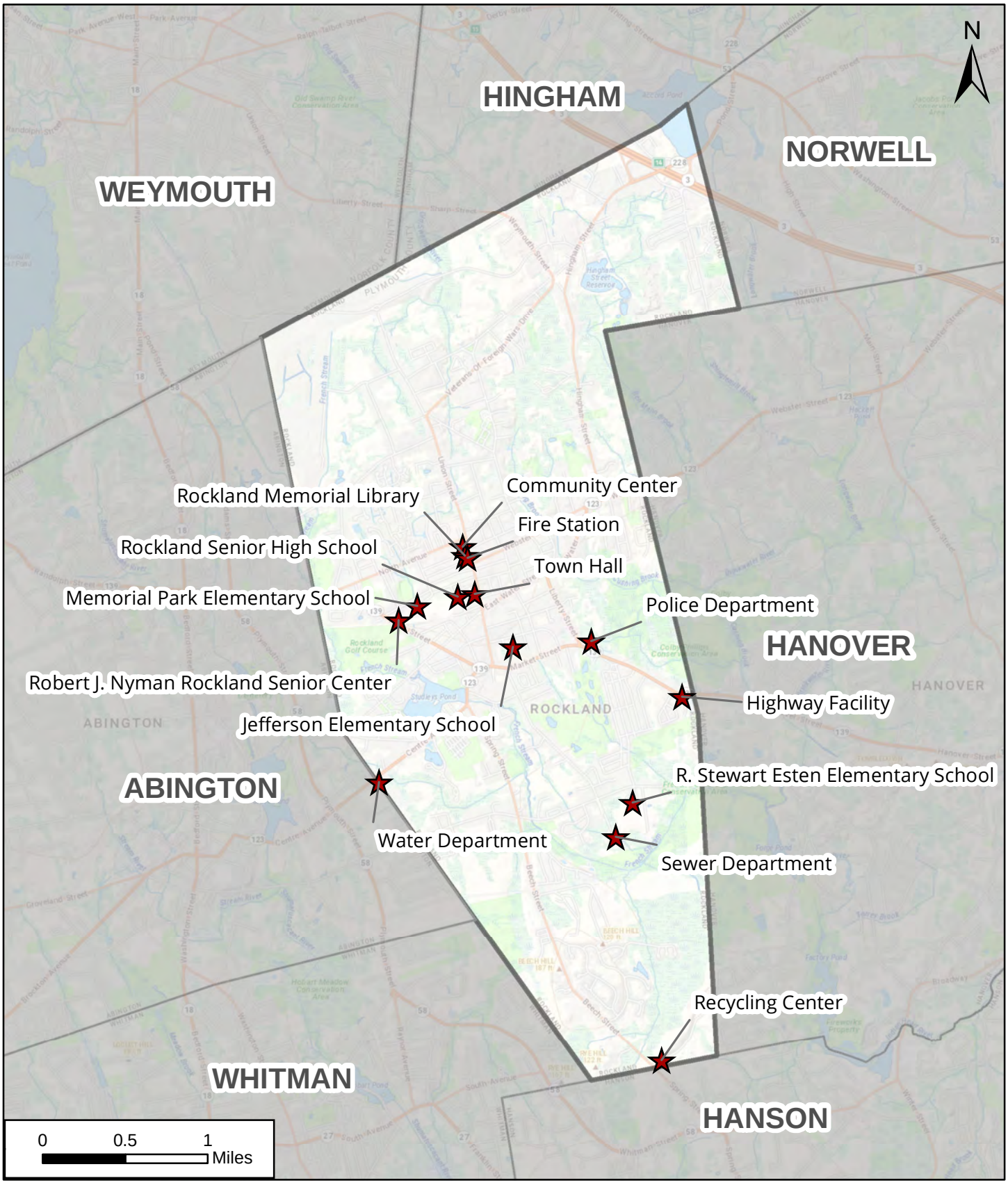
CC: Natalie M. Pommersheim, Environmental Partners
William M. Watts, Environmental Partners

Figures: 1. Municipal Facility Audit Map

Appendices: A. Municipal Facility Audit Summary
B. PDF Reports with Photo Documentation
C. A Summary of Requirements for Small Quantity Generators of Hazardous Waste

Figure 1:

Municipal Facility Audit Map



ENVIRONMENTAL PARTNERS

Figure 1
Municipal Facility Audit Map
Rockland,Massachusetts

I:\Rockland.183\Stormwater\Stormwater_2020\Facility Audits\Figures\MXDs\Figure 1 - Municipal Facility Audit Map.mxd

Appendix A:

Municipal Facility Audit Summary

ENVIRONMENTAL PARTNERS

Town of Rockland, Massachusetts
National Pollution Discharge Elimination System Stormwater Permit
Pollution Prevention & Good Housekeeping for Municipal Operations
Municipal Facility Audit Summary (August 19, 2020 and August 31, 2020)

Facility	Address	Purpose of Facility	Observed Instances of Non-Conformance	Recommendation	Non-MS4 Observations & Recommendations
Rockland Community Center	394 Union Street	Community Center	Dumpster uncovered.	Verify floor drain discharge location. Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
R. Stewart Esten Elementary School	733 Summer Street	School	N/A	N/A	N/A
Fire Department	360 Untio Street	Fire Station	N/A	N/A	N/A
Rockland Senior High School	52 Mackinlay Way	School	Dumpster uncovered.	Verify origin of pipe discharging to catch basin in grass in front of Goddard Ave. Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
Highway Department	841 Market Street	Highway Facility	N/A	Previously unmapped stormwater assets (MS4 Outfall, catch basins) 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 the flammables storage locker. Purchase additional storage lockers as needed.
Jefferson Elementary School	34 James Street	School	N/A	N/A	N/A
Rockland Memorial Library	20 Belmont Street	Library	N/A	Previously unmapped stormwater assets (manhole, catch basin) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Memorial Park Elementary School	1 Lt Col Brian Duffy Way	School	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
Police Department	490 Market Street	Police Station	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water.	N/A
Robert J. Nyman Rockland Senior Center	317 Plain Street	Senior Center	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Previously unmapped stormwater assets (catch basins, drain manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	Remove fertilizers and other items from top of flammables storage locker.
Sewer Department	587 Summer Street	Sewer Facility	N/A	Previously unmapped stormwater catch basin was discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Town Hall	242 Union Street	School	Dumpster uncovered.	Remind employees to keep dumpster lids closed to avoid collection of rain water. Previously unmapped stormwater assets (catch basins, drain manholes) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A
Recycling Center	1000 Beech Street	Transfer Station	N/A	N/A	N/A
Abington & Rockland Joint Water Department	366 Centre Avenue	Water Department	N/A	Previously unmapped stormwater assets (catch basins, drain manholes, outfall) were discovered during site visit. Update GIS maps to reflect stormwater assets.	N/A

Appendix B:

PDF Reports and Photo Documentation

Community Center

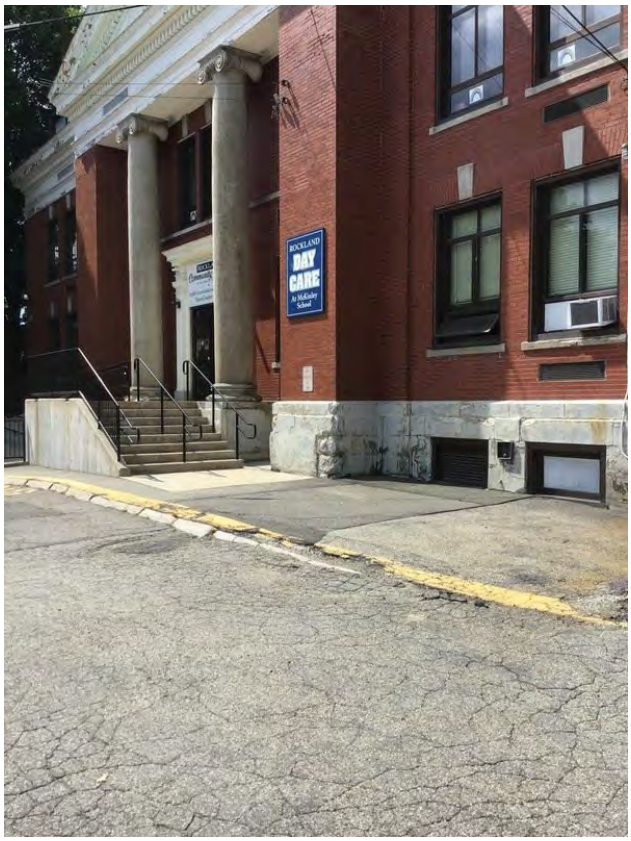
Created	2020-08-19 15:28:52 UTC by EPField 01
Updated	2020-08-19 15:39:13 UTC by EPField 01
Location	42.1329300321093, -70.9170779585838

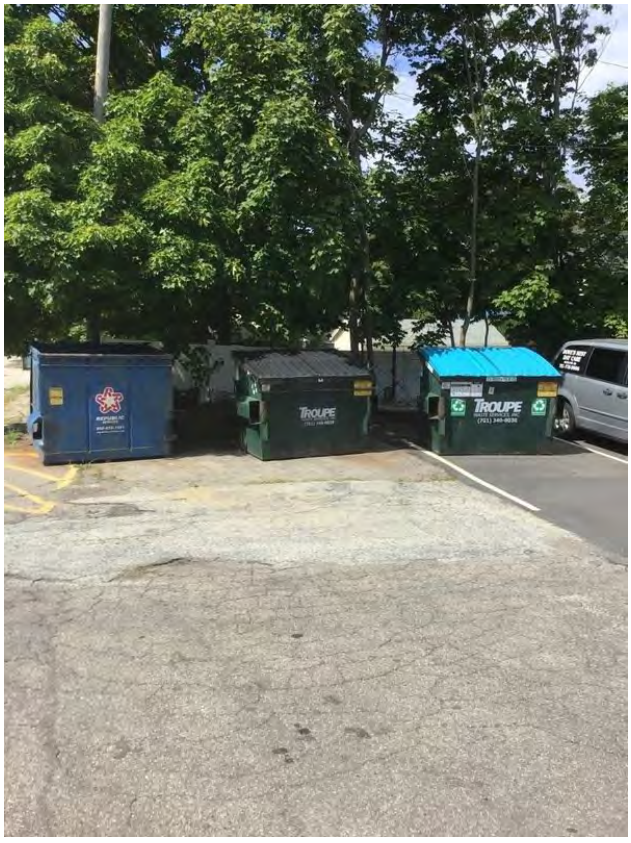
General

Client	Town of Rockland
Date	2020-08-19
Time	11:28
Address	394 Union St Rockland, MA 02370
Facility Type	Community Center

Inspection Information

Photos


ROCKLAND
DAY
CARE


TROUPE
TROUPE

DRAIN

School, R. Stewart Esten Elementary School

Created	2020-08-31 15:22:00 UTC by EPField 01
Updated	2020-09-01 14:38:33 UTC by EPField 01
Location	42.1103148967799, -70.8972316235304

General

Client	Town of Rockland
Date	2020-08-31
Time	11:22
Address	733 Summer St Rockland, MA 02370
Facility Type	School
Facility Name	R. Stewart Esten Elementary School

Inspection Information

Photos

CB 1

Fire Station, Rockland Fire Station

Created	2020-08-31 16:29:18 UTC by EPField 01
Updated	2020-09-01 14:04:23 UTC by EPField 01
Location	42.1319384577713, -70.9164898842573

General

Client	Town of Rockland
Date	2020-08-31
Time	12:29
Address	360 Union St Rockland, MA 02370
Facility Type	Fire Station
Facility Name	Rockland Fire Station

Inspection Information

Photos

FIRE-RESCUE
CALL
911
ROCKLAND

School, Rockland Senior High School

Created	2020-08-31 14:23:53 UTC by EPField 01
Updated	2020-09-01 14:30:40 UTC by EPField 01
Location	42.1285339675581, -70.9176781028509

General

Client	Town of Rockland
Date	2020-08-31
Time	10:23
Address	52 Mackinlay Way Rockland, MA 02370
Facility Type	School
Facility Name	Rockland Senior High School

Inspection Information

Photos

Highway Facility

Created	2020-08-19 17:02:10 UTC by EPField 01
Updated	2020-08-20 11:40:55 UTC by EPField 01
Location	42.1195945982282, -70.8912727609937

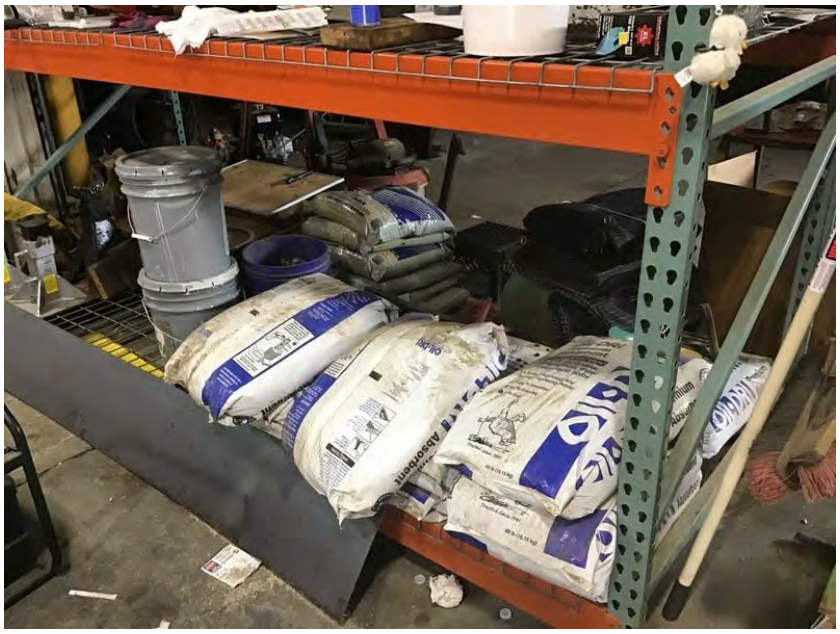
General

Client	Town of Concord
Date	2020-08-19
Time	13:02
Address	841 Market St Rockland, MA 02370
Facility Type	Highway Facility

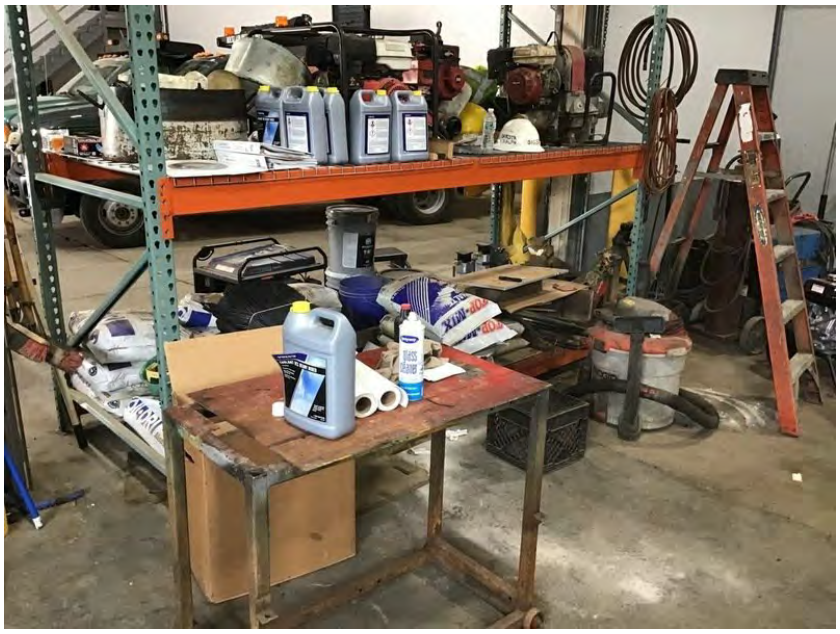
Inspection Information

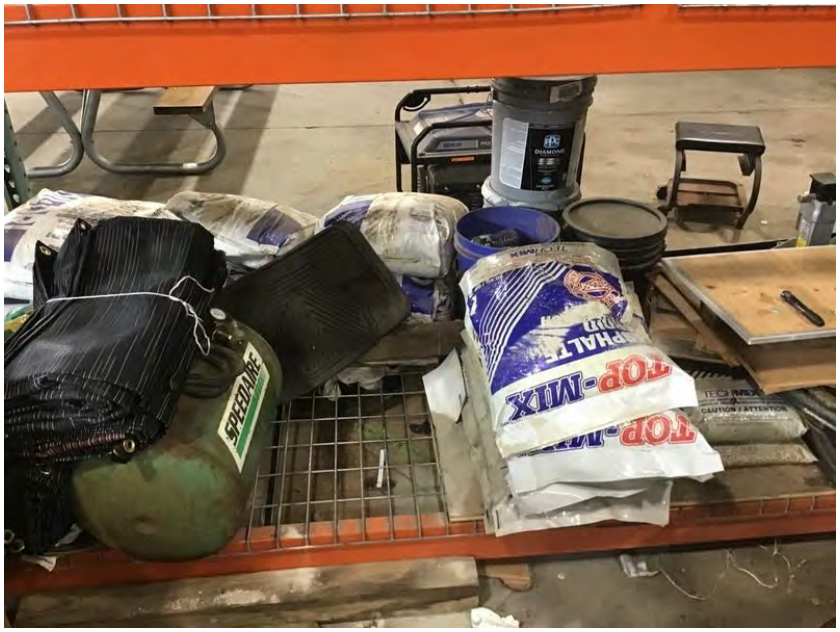
Photos

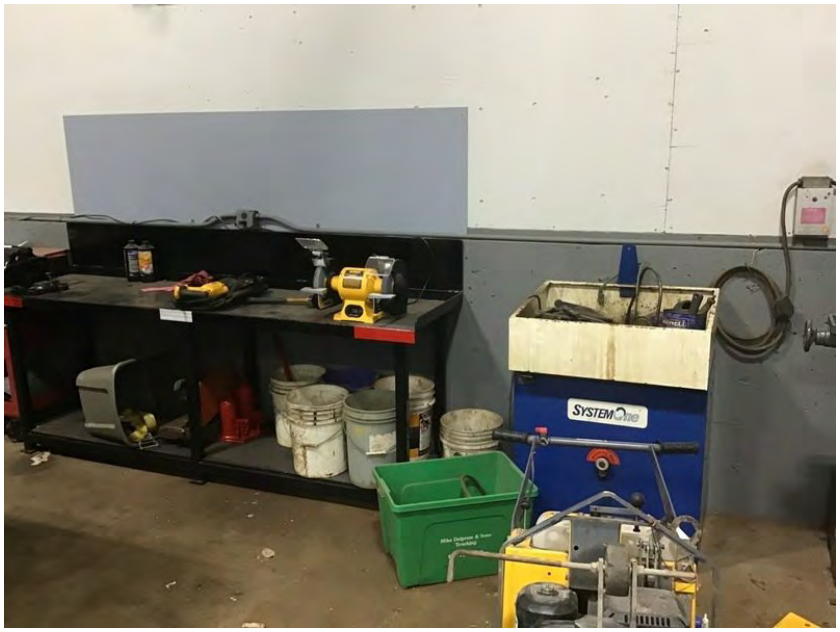
EMERGENCY EYE WASH



HIGHWAY DEPART

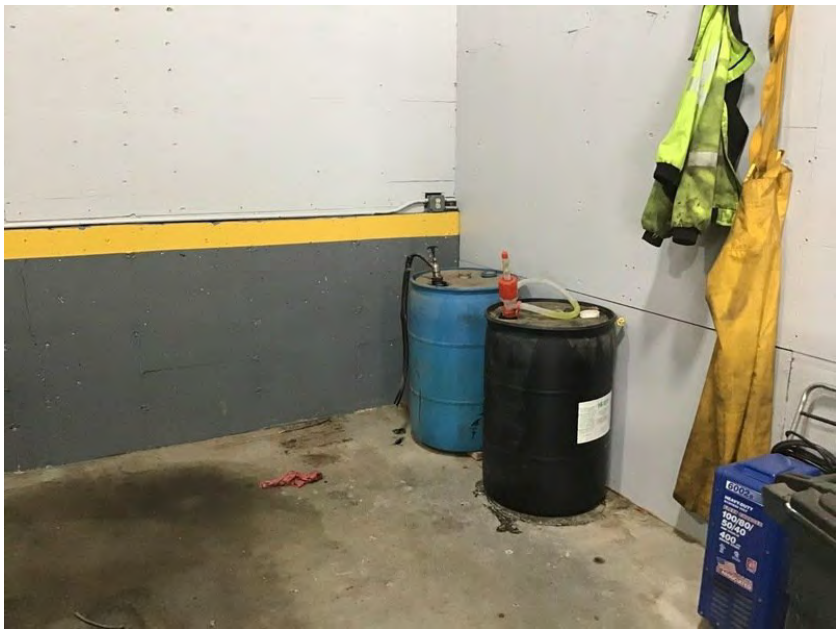


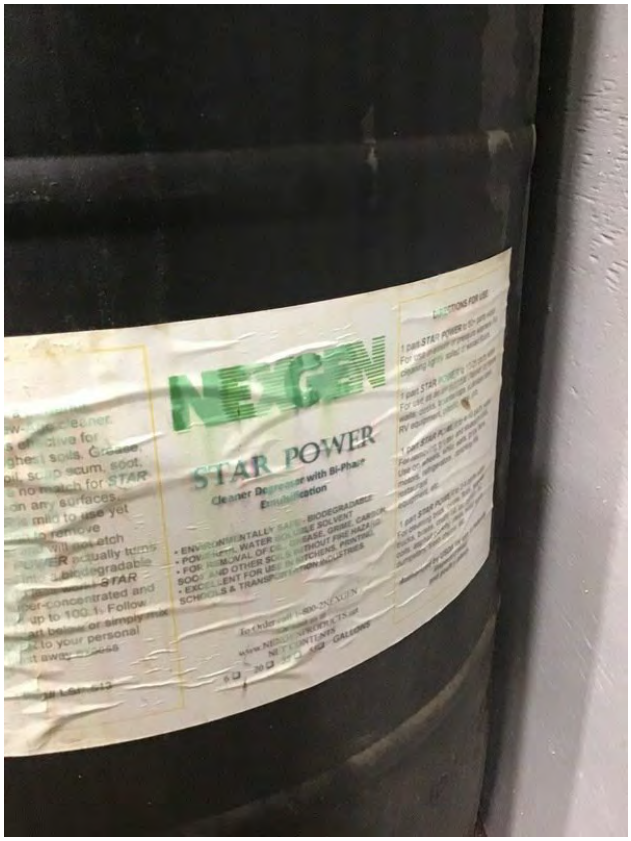

TOP-MIX


SYSTEM

GD
GARDNER DENVER

TOWN OF ROCKLAND
HIGHWAY DEPT.
WASTE OIL




NEIGEN
STAR POWER

DENNIS K. BU

(800)543-5408
MAX.
TARE
NET
CU.CAP.

KOHLER. POWER SYSTEMS

STOP
SPEED
LIMIT
35

JRB
STOP

CAT
TEREX

E.O.M.S.
508-587-9686

ROCKLAND
HIGHWAY
DEPARTMENT

FIRST AID

REZNOR

REZNOR
RA250

E.O.M.S.
508-587-9686

CAUTION
KEEP BACK
150 FT

DOWFLAKE XTRA
CALCIUM CHLORIDE
83-87% PURE
Made from natural brine!
Concrete Accelerator * Dust Suppressant * Snow And Ice
Meets ASTM D98/AASHTO M144 Standards
Concrete Accelerator * Dust Suppressant
Accelerateur Pour Béton
Poussiérant

VOLVO

KEEP ROCKLAND CLEAN
REPUBLIC

DIESEL
NO SMOKING

GASOLINE

CAUTION
KEEP BACK
50 FT

DownEaster

DANGER

School, Jefferson Elementary School

Created	2020-08-31 15:04:10 UTC by EPField 01
Updated	2020-09-01 14:35:52 UTC by EPField 01
Location	42.1240883879756, -70.9112108778869

General

Client	Town of Rockland
Date	2020-08-31
Time	11:04
Address	34 James St Rockland, MA 02370
Facility Type	School
Facility Name	Jefferson Elementary School

Inspection Information

Photos

Library

Created	2020-08-19 15:39:17 UTC by EPField 01
Updated	2020-08-19 15:41:37 UTC by EPField 01
Location	42.1321236953802, -70.9168251603842

General

Client	Town of Rockland
Date	2020-08-19
Time	11:39
Address	20 Belmont St Rockland, MA 02370
Facility Type	Library

Inspection Information

Photos

School, Memorial Park Elementary School

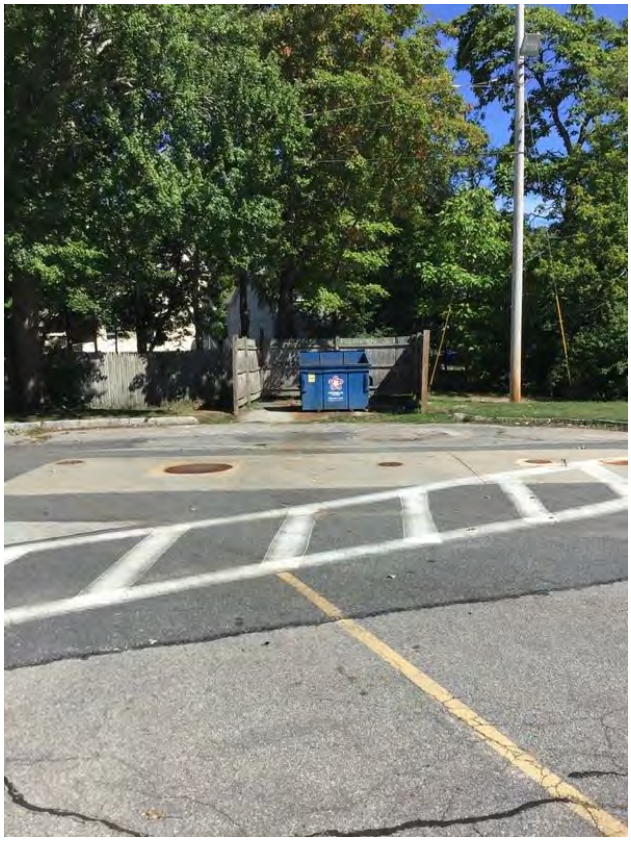
Created	2020-08-31 14:48:31 UTC by EPField 01
Updated	2020-09-01 14:33:01 UTC by EPField 01
Location	42.1277489327287, -70.9224738926356

General

Client	Town of Rockland
Date	2020-08-31
Time	10:48
Address	1 Lt Col Brian Duffy Way Rockland, MA 02370
Facility Type	School
Facility Name	Memorial Park Elementary School

Inspection Information

Photos



Police Station, Rockland Police Department

Created	2020-08-31 16:43:03 UTC by EPField 01
Updated	2020-09-01 14:34:23 UTC by EPField 01
Location	42.1245406940566, -70.90197712183

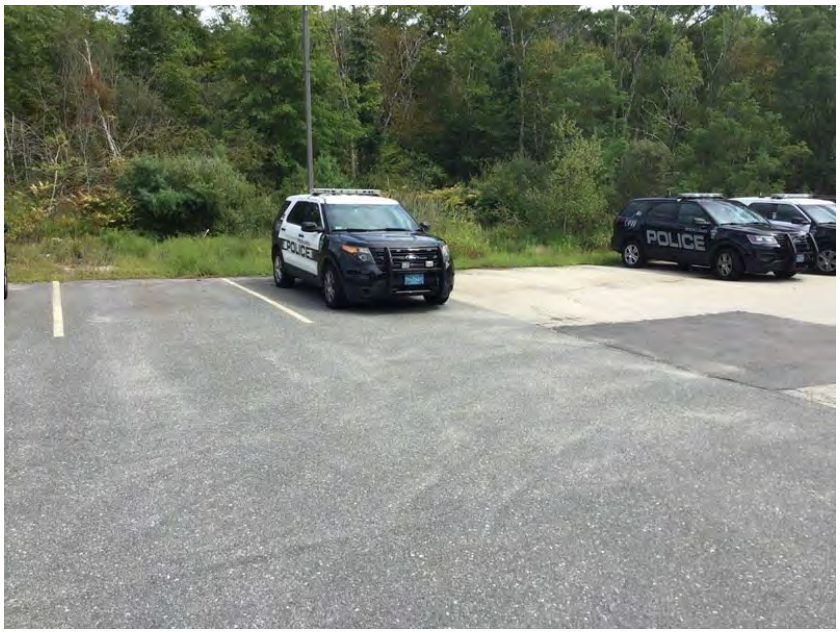
General

Client	Town of Rockland
Date	2020-08-31
Time	12:43
Address	490 Market St Rockland, MA 02370
Facility Type	Police Station
Facility Name	Rockland Police Department

Inspection Information

Photos

6yd
REPUBLIC
800-925-3260


POLICE
POLICE

Senior Center

Created	2020-08-19 15:48:26 UTC by EPField 01
Updated	2020-08-19 15:58:53 UTC by EPField 01
Location	42.1265016791708, -70.9247326478362

General

Client	Town of Rockland
Date	2020-08-19
Time	11:48
Address	317 Plain St Rockland, MA 02370
Facility Type	Senior Center

Inspection Information

Photos

Sewer Department, Rockland Sewer Department

Created	2020-08-31 15:37:03 UTC by EPField 01
Updated	2020-09-01 14:40:45 UTC by EPField 01
Location	42.1073049260696, -70.8992677555148

General

Client	Town of Rockland
Date	2020-08-31
Time	11:37
Address	587 Summer St Rockland, MA 02370
Facility Type	Sewer Department
Facility Name	Rockland Sewer Department

Inspection Information

Photos

Town Hall

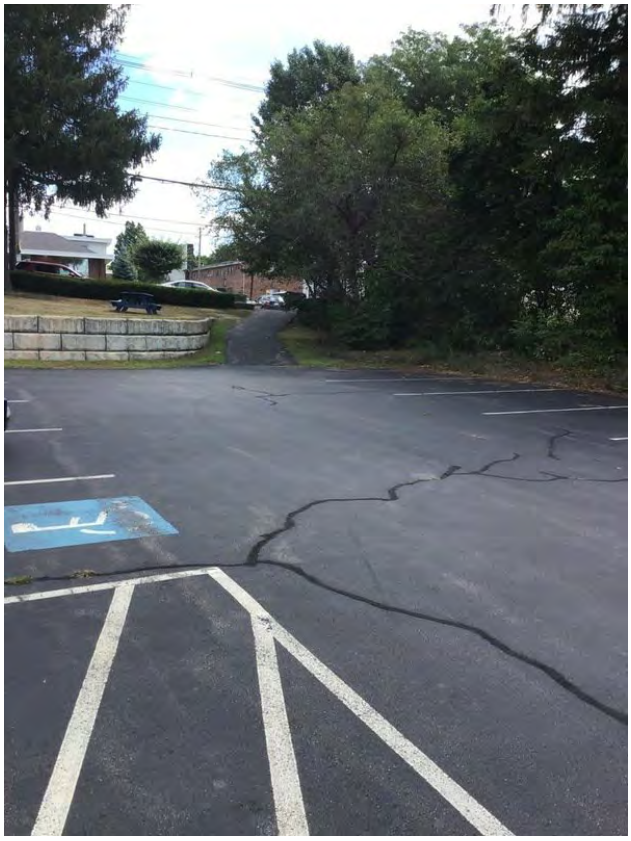
Created	2020-08-19 14:59:46 UTC by EPField 01
Updated	2020-08-19 15:23:41 UTC by EPField 01
Location	42.1287423399489, -70.9156952798367

General

Client	Town of Rockland
Date	2020-08-19
Time	10:59
Address	242 Union St Rockland, MA 02370
Facility Type	Town Hall

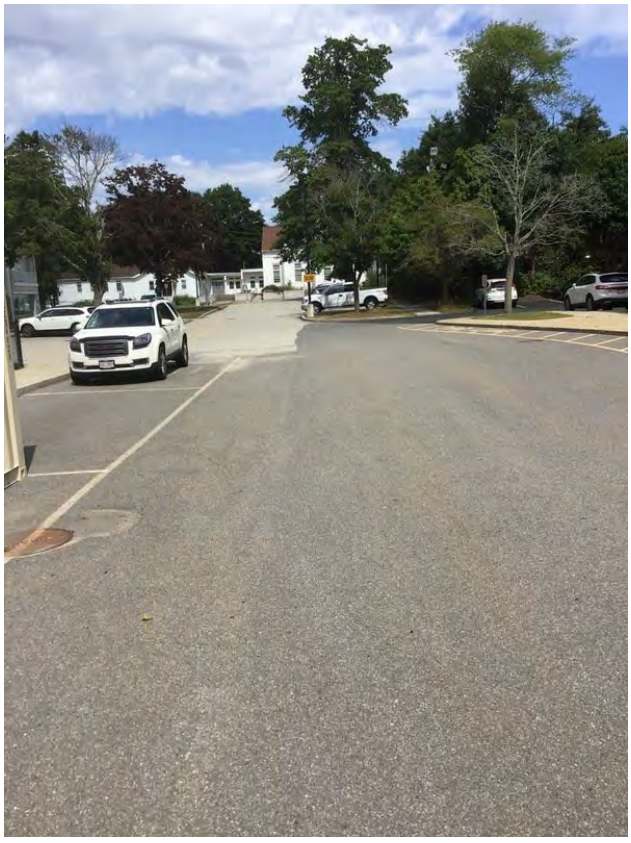
Inspection Information

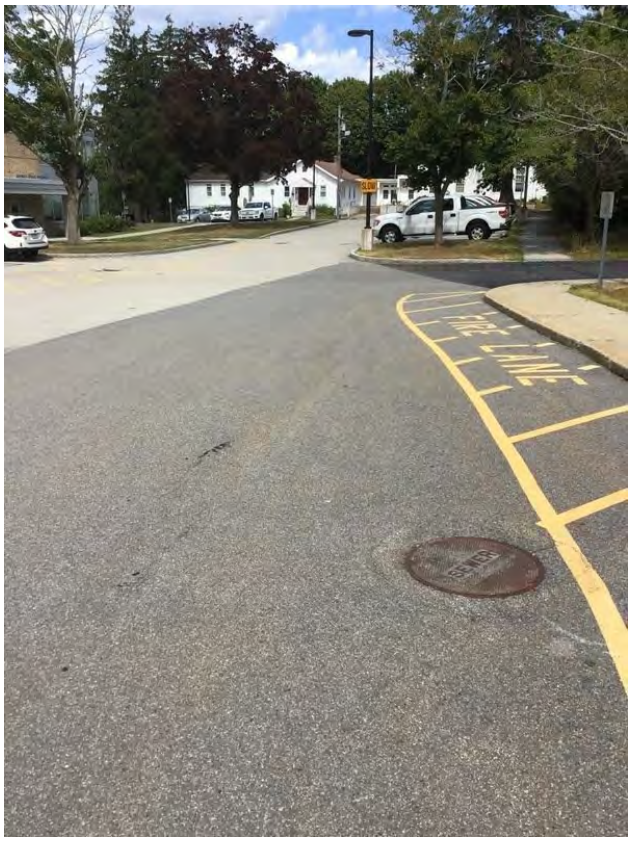
Photos

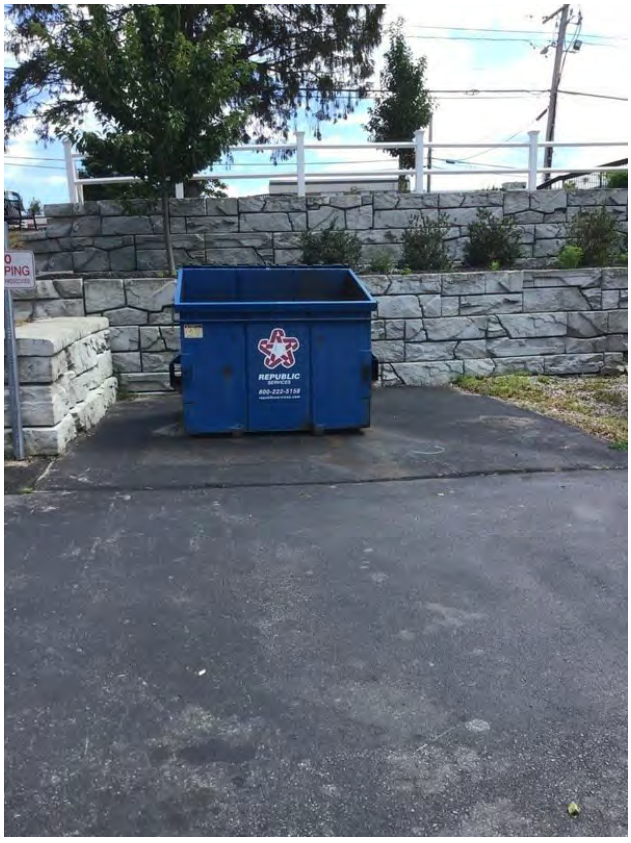


mobile mini

FIRE LANE




FIRE LANE


REPUBLIC

Transfer Station , Town of Rockland Recycle Center

Created	2020-08-31 16:59:41 UTC by EPField 01
Updated	2020-09-01 14:43:15 UTC by EPField 01
Location	42.0876258938034, -70.894014062426

General

Client	Town of Rockland
Date	2020-08-31
Time	12:59
Address	1000 Beech St Rockland, MA 02341
Facility Type	Transfer Station
Facility Name	Town of Rockland Recycle Center

Inspection Information

Photos

DANGER
USED
OIL
HAZARDOUS WASTE
TOXIC WASTE OIL

LEAVES
ONLY

Abington & Rockland Joint Water Department, Water Department

Created	2020-08-31 17:28:12 UTC by EPField 01
Updated	2020-09-01 14:37:30 UTC by EPField 01
Location	42.1122785606247, -70.927155688405

General

Client	Town of Rockland
Date	2020-08-31
Time	13:28
Address	366 Centre Ave Rockland, MA 02370
Facility Type	Abington & Rockland Joint Water Department
Facility Name	Water Department

Inspection Information

Photos

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.

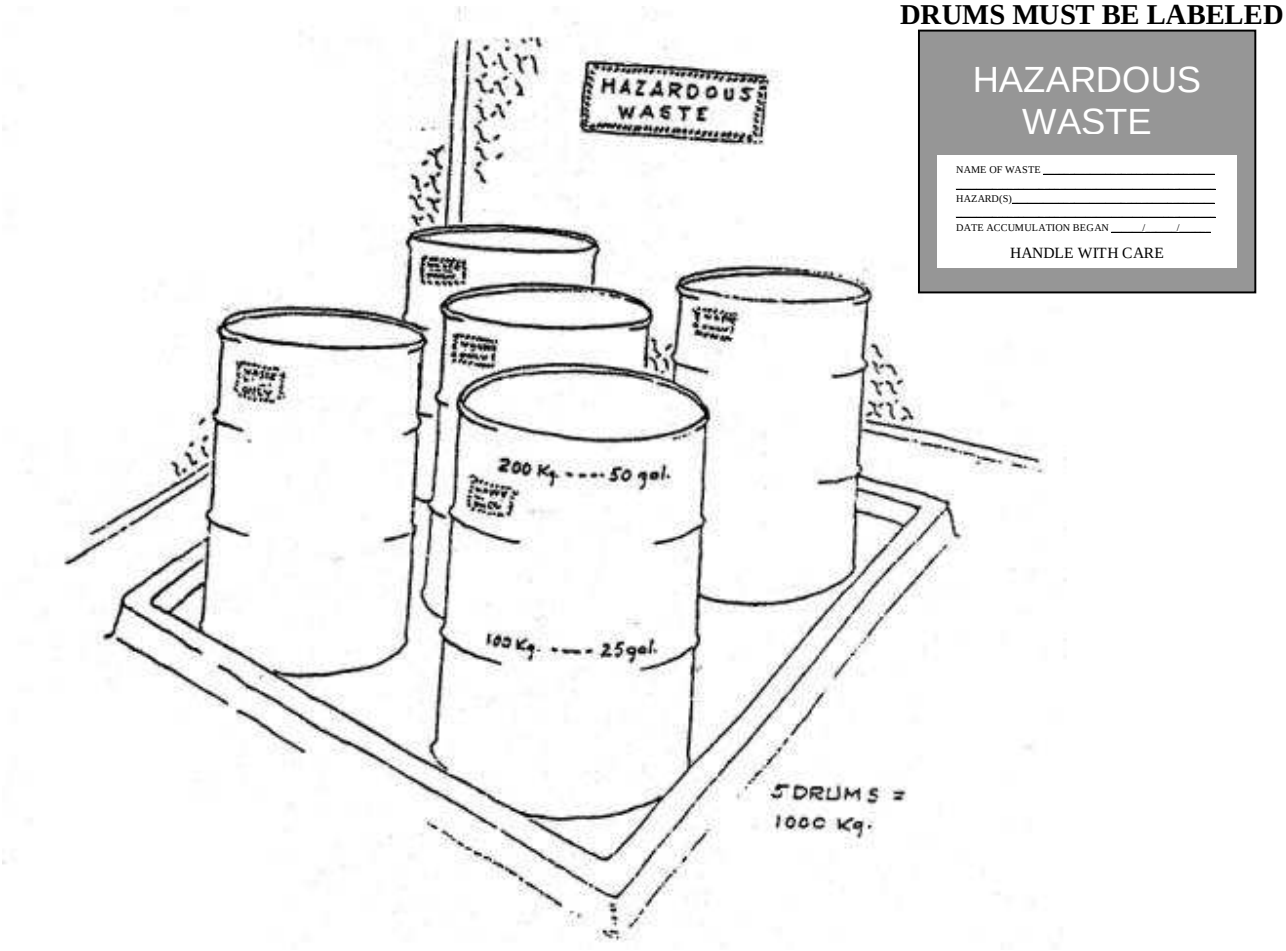
VSQG • Separate containers of incompatible wastes by a berm, dike, or similar structure.

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.

and

- 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

ENVIRONMENTAL PARTNERS
An Apex Company

July 6th, 2023

David P. Taylor, Jr.
Highway Superintendent
841 Market Street
Rockland, MA 02370

RE: NPDES Phase II Stormwater Assistance
Pollution Prevention & Good Housekeeping for Municipal Operations
Stormwater Treatment Structure Observations

Dear Mr. Taylor,

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 Rockland 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 observations, Environmental Partners (EP) completed observations on 12 of the Town's stormwater treatment structures (BMPs) to provide inventory and condition data. The location of the BMPs observed are shown on attached Figure 1 and Figure 2. The observation results are summarized in Table 1.

In summary, BMP site visits were conducted on June 21, 2023 and the following maintenance issues were identified.

ID	BMP Type	Maintenance Issues
BMP-1	Extended Dry Detention Basin	Overgrowth throughout basin and obscuring inlet. Excess leaf litter and organic debris. – remove all to prevent clogging and rip rap at inlet should be washed of sediment
BMP-2	Extended Dry Detention Basin	Excess vegetation, dead vegetation, and trees growing near headwall. Resident also noted ground sinking; suggesting a crack or collapse of drainage pipe. –remove all vegetation to prevent clogging, and inspect drainage pipe
BMP-3	Extended Dry Detention Basin	Significant sediment throughout basin, and rip-rap needs to be washed and replacement to avoid erosion.

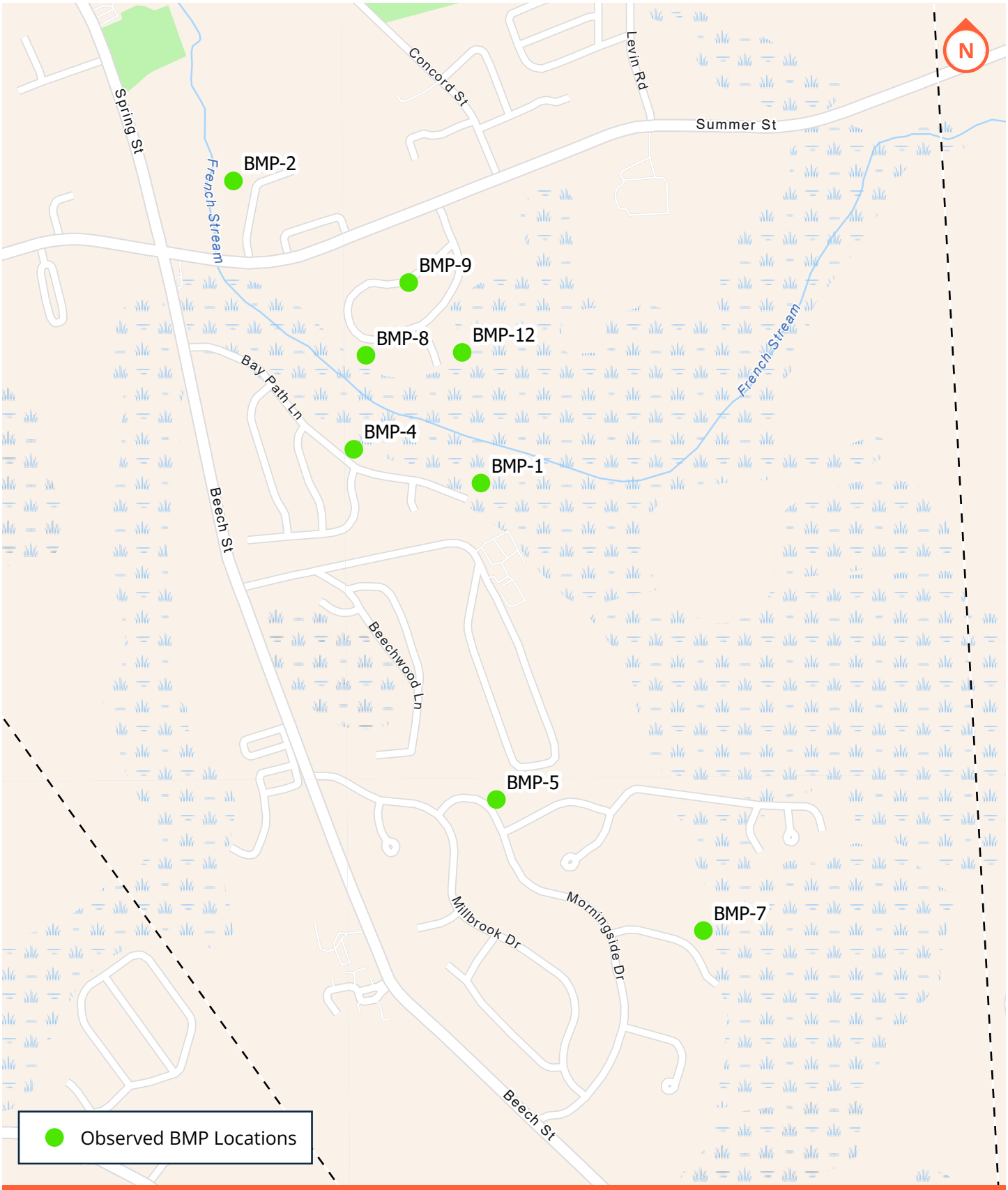
ID	BMP Type	Maintenance Issues
BMP-4	Detention Basin	Excess vegetation, leaf litter and sediment. Rip rap needs to be washed. – remove all to prevent clogging.
BMP-5	Extended Dry Detention Basin	Significantly overgrown, excess leaf litter, and sediment. – remove all to prevent clogging.
BMP-6	Subsurface Structure	Excess leaf litter
BMP-8	Constructed Stormwater Wetland	Significant wetland plant growth and cracks throughout primary inlet headwall. Leaf litter at perimeter and overflow spillway should be removed. – consult original design plans to see if BMP meant to function as wetland
BMP-9	Extended Dry Detention Basin	Excess vegetation, leaf litter, and sedimentation – remove all to prevent clogging.
BMP-10	Extended Dry Detention Basin	Excess vegetation and sedimentation throughout basin. Standing water observed, likely due to sedimentation inhibiting infiltration. – remove all to prevent clogging
BMP-11	Extended Dry Detention Basin	Excess vegetation, and sedimentation – remove all to prevent clogging and restore rip rap
BMP-12	Detention Basin	Excess leaf litter, and sedimentation – remove all to prevent clogging.

Completed BMP observation data forms with photographs are also attached. We very much appreciate the opportunity to work with the Town of Rockland on this project. Please call or e-mail us if you have any questions or require additional information.

Sincerely,

Natalie Pommersheim
Project Manager and Associate
P: 617.657.0257
E: nmp@envpartners.com

Figures:	BMP Observation Locations Figure 1 BMP Observation Locations Figure 2
Tables:	Stormwater BMP Observation Table
Attachments:	BMP Observation Data Forms



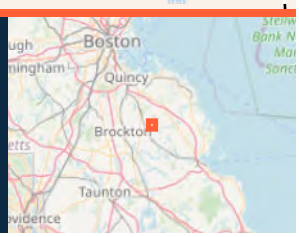
ENVIRONMENTAL PARTNERS
— An Apex Company —

Figure 1: BMP Observation Locations

Rockland, Massachusetts

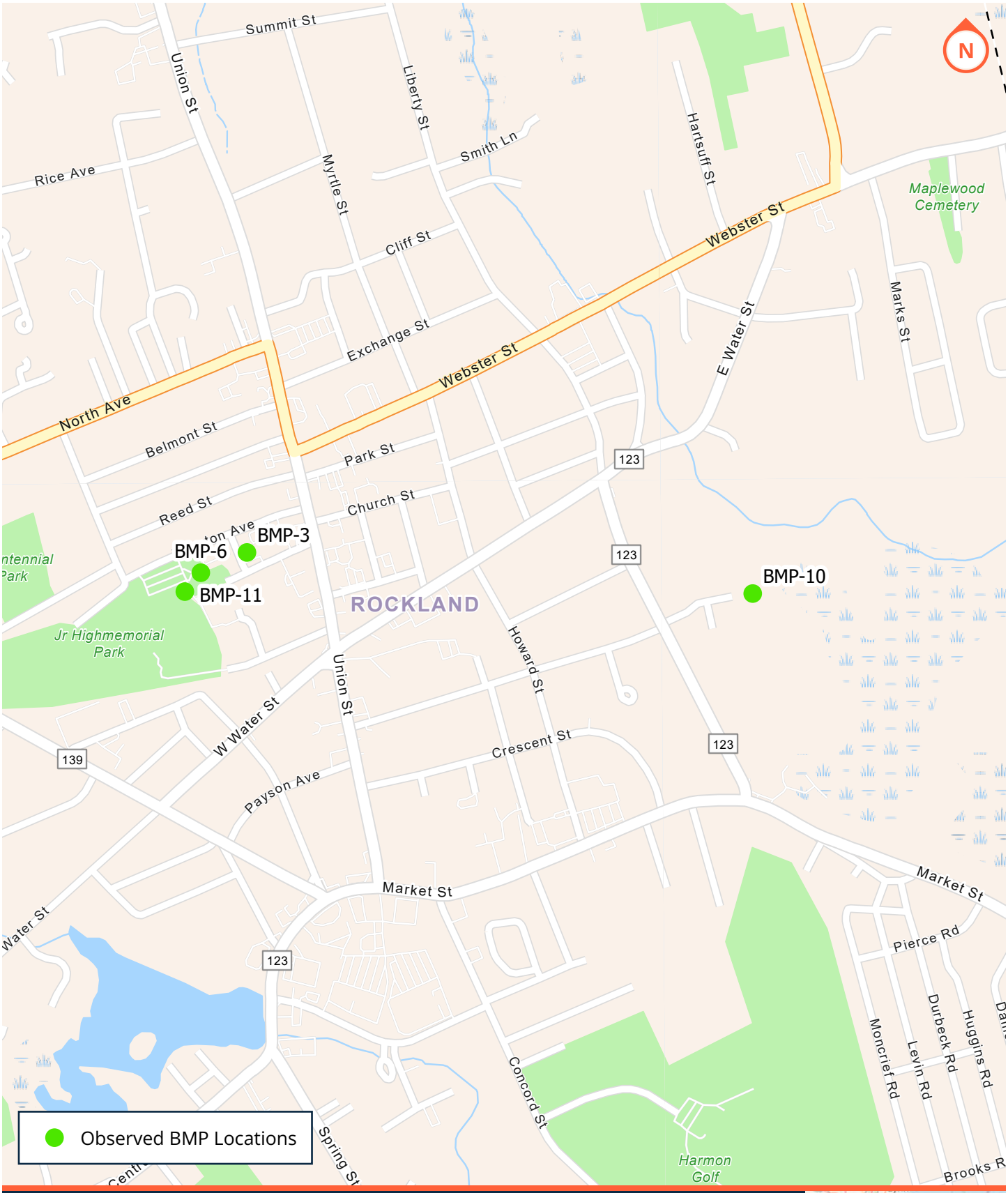
0 250 500 1,000 Feet

1:10,200



I:\Rockland.183\22006339 Year 5 MS4 Support Services\5 GIS\ProjectMapping

Disclaimer: This map is intended for planning purposes



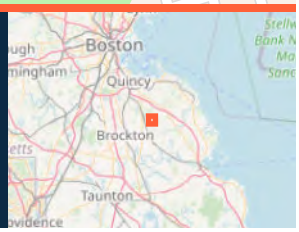
ENVIRONMENTAL PARTNERS
An Apex Company

Figure 2: BMP Observation Locations

Rockland, Massachusetts

0 250 500 1,000 Feet

1:10,200



I:\Rockland.183\22006339 Year 5 MS4 Support Services\5 GIS\ProjectMapping

Disclaimer: This map is intended for planning purposes

Table 1: Stormwater BMP Observation Table

ENVIRONMENTAL PARTNERS
— An Apex Company —

BMP ID	Date	Weather	Location/Nearest Address	BMP Category	BMP Type	Type of Inspection	Invasive Species	Soil Erosion	Excess Vegetation	Dead Vegetation	Excess Salt	Trash/ Debris	Oil/Grease	Excess Sediment	Inlet/Outlet Condition	Outlet Erosion	Cracking	Clogging	Other/Safety
BMP-1	6/21/2023	Warm, Clear	50 Bay Path Lane	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Unsatisfactory
BMP-2	6/21/2023	Warm, Clear	23 Eleanor Lane	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-3	6/21/2023	Warm, Clear	3 Goddard Avenue	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-4	6/21/2023	Warm, Clear	22 Bay Path Lane	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory
BMP-5	6/21/2023	Warm, Clear	8 Morningside Drive	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Unsatisfactory	Satisfactory
BMP-6	6/21/2023	Warm, Clear	120-140 Taunton Avenue	Infiltration BMP	Subsurface Structure	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-7	6/21/2023	Warm, Clear	10 Franklin Hunt Road	Treatment BMP	Wet Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-8	6/21/2023	Warm, Clear	24 Winter Circle	Treatment BMP	Constructed Stormwater Wetland	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-9	6/21/2023	Warm, Clear	39 Winter Circle	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Unsatisfactory
BMP-10	6/21/2023	Warm, Clear	7 King Phillip Circle	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-11	6/21/2023	Warm, Clear	142 - 182 Taunton Avenue	Treatment BMP	Extended Dry Detention Basin	Regular	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory
BMP-12	6/21/2023	Warm, Clear	6 Autumn Lane	Treatment BMP	Detention Basin	Regular	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Not Applicable	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	Satisfactory	Not Applicable	Satisfactory	Satisfactory

BMP-8, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:01:23 UTC by EPField 01
Location	42.1070276446, -70.9051484987
Status	Complete
BMP ID	BMP-8
Date	2023-06-21
Time	10:59
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Constructed Stormwater Wetland
Address	24 Winter Cir Rockland, MA 02370
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	Leaf litter and pine needles surrounding 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

Inlet Condition

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Significant crack in headwall

Corrective Action Needed	Conduct structural inspection

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 covers large area and has significant wetland plant growth throughout primary detention area. Original design plans should be consulted before disturbing the area for significant maintenance in case area is meant to function as a wetland. Leaf litter at perimeter and in overflow spillway should be removed. Significant cracks throughout primary inlet headwall should be inspected.
Photos	

BMP-11, Treatment BMP

Created	2023-02-15 15:28:58 UTC by EPField 01
Updated	2023-06-21 14:31:48 UTC by EPField 01
Location	42.1285650494, -70.9190725163
Status	Complete
BMP ID	BMP-11
Date	2023-06-21
Time	10:24
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

Location	High School
BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	142–182 Taunton Ave Rockland, MA 02370
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	Grass growth in rip rap
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	Sediment throughout basin
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet 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	Sedimentation throughout basin has allowed for vegetative growth. Sediment should be thoroughly removed and rip rap restored.
Photos	

BMP-5, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:06:39 UTC by EPField 01
Location	42.0977738705, -70.9015935659
Status	Complete
BMP ID	BMP-5
Date	2023-06-21
Time	12:02
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	8 Morningside Dr Rockland, MA 02370
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	Leaf litter likely throughout basin
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?	No
BMP Issue Location/Amount	Sedimentation likely throughout basin
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Standing water
Corrective Action Needed	Clear sediment and vegetation

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	BMP is significantly overgrown and needs to be thoroughly cleared of vegetation. Buildup of sediment and leaf litter at the floor of the basin has likely impedes infiltration and allowed for overgrowth. If available, design plans should be referenced to confirm.
Photos	

BMP-1, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:25:58 UTC by EPField 01
Location	42.1043550595, -70.9019635237
Status	Complete
BMP ID	BMP-1
Date	2023-06-21
Time	11:42
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	50 Bay Path Ln Rockland, MA 02370
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 basin
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Leaf litter and organic debris
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

Inlet 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	Inlet obscured due to overgrowth
Corrective Action Needed	Prune
Notes	Basin should be thoroughly cleared of vegetation growth. Leaf litter and layer of sedimentation should be removed. Rip rap at inlet should be washed of sediment. Inlet could not be located due to significant overgrowth. Vegetation at perimeter should be trimmed back to allow visual access to inlet. If available, design plans should be referenced.
Photos	

BMP-2, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:15:33 UTC by EPField 01
Location	42.1106701842, -70.908815236
Status	Complete
BMP ID	BMP-2
Date	2023-06-21
Time	19:09
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	23 Eleanor Ln Rockland, MA 02370
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 basin
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Leaf litter and tree debris throughout basin
Corrective Action Needed	Remove

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	Sedimentation at inlet
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet 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	Basin should be thoroughly cleared of vegetation growth. Leaf litter and layer of sedimentation should be removed. Trees growing near inlet headwall should be removed. If available, design plans should be referenced. Resident also noted ground sinking approximately 30 feet from headwall and suggested there could be a crack or collapse of drainage pipe.

BMP-12, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 14:50:25 UTC by EPField 01
Location	42.107073415, -70.9024628115
Status	Complete
BMP ID	BMP-12
Date	2023-06-21
Time	10:44
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Detention Basin
Address	6 Autumn Ln Rockland, MA 02370
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	Leaf litter in floor of basin
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?	No
BMP Issue Location/Amount	Mud and sediment throughout basin
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet 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	Sediment throughout basin should be thoroughly removed along with leaf litter.
Photos	

BMP-6, Infiltration BMP

Created	2023-02-15 15:28:58 UTC by EPField 01
Updated	2023-06-21 14:32:03 UTC by EPField 01
Location	42.1289556847, -70.9186232463
Status	Complete
BMP ID	BMP-6
Date	2023-06-21
Time	10:20
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

Location	Courtyard of high school
BMP Category	Infiltration BMP
BMP Type - Infiltration	Subsurface Structure
Address	120–140 Taunton Ave Rockland, MA 02370
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 Condition

Is Status of BMP Satisfactory?	Yes

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	Subsurface basin is generally in good condition. Chambers should be periodically cleaned.

Photos

DRAIN

BMP-3, Treatment BMP

Created	2023-02-15 15:28:58 UTC by EPField 01
Updated	2023-06-21 14:11:10 UTC by EPField 01
Location	42.1293697413, -70.9173300863
Status	Complete
BMP ID	BMP-3
Date	2023-06-21
Time	10:06
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

Location	High School
BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	3 Goddard Ave Rockland, MA 02370
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	Erosion at inlets
Corrective Action Needed	Stabilize, reseed

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 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	Significant sedimentation at inlets
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	Yes

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Significant sedimentation observed throughout basin, particularly at inlet pipes. Sediment should be removed, rip rap washed and replaced, and basin reseeded as needed.
Photos	

CUTTER SIDE

BMP-9, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:18:24 UTC by EPField 01
Location	42.1085320734, -70.9039412786
Status	Complete
BMP ID	BMP-9
Date	2023-06-21
Time	11:08
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	39 Winter Cir Rockland, MA 02370
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 basin
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Leaf litter
Corrective Action Needed	Remove

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	Sedimentation likely
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet 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	Standing water
Corrective Action Needed	Remove sediment and dead vegetation
Notes	Basin should be thoroughly cleared of vegetation growth. Leaf litter and layer of sedimentation should be removed. Rip rap at inlet should be washed of sediment. Growth at perimeter should be trimmed back to allow visual access to inlet. If available, design plans should be referenced.

BMP-4, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:20:58 UTC by EPField 01
Location	42.1050747629, -70.9055062383
Status	Complete
BMP ID	BMP-4
Date	2023-06-21
Time	11:32
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	22 Bay Path Ln Rockland, MA 02370
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	Leaf litter and organic debris
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?	No
BMP Issue Location/Amount	Sedimentation likely
Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet Condition

Is Status of BMP Satisfactory?	Yes

Outlet Area Erosion

Is Status of BMP Satisfactory?	Yes

Clogging/Standing Water

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Standing water
Corrective Action Needed	Remove excess vegetation

Other Issues

Is Status of BMP Satisfactory?	Yes
Notes	Basin should be thoroughly cleared of vegetation growth. Leaf litter and layer of sedimentation should be removed. Rip rap at inlet should be washed of sediment. Growth at perimeter should be trimmed back to allow visual access to inlet. If available, design plans should be referenced.
Photos	

BMP-10, Treatment BMP

Created	2023-02-15 15:28:58 UTC by EPField 01
Updated	2023-06-21 13:48:34 UTC by EPField 01
Location	42.1284429598, -70.9032142907
Status	Complete
BMP ID	BMP-10
Date	2023-06-21
Time	09:35
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

Location	Behind cul-de-sac
BMP Category	Treatment BMP
BMP Type - Treatment	Extended Dry Detention Basin
Address	7 King Phillip Cir Rockland, MA 02370
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 erosion noted at sides of headwall
Corrective Action Needed	Stabilize

Excess Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Excess growth throughout basin
Corrective Action Needed	Mow/Rake/Prune

Dead Vegetation

Is Status of BMP Satisfactory?	No
BMP Issue Location/Amount	Leaves and dead vegetation throughout basin
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?	No
BMP Issue Location/Amount	Sediment throughout rip rap

Corrective Action Needed	Remove Sediment

Outlet Condition

Is Status of BMP Satisfactory?	Yes

Inlet 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	Sedimentation and excess vegetation throughout basin should be removed. Some standing water observed, likely due to sedimentation inhibiting infiltration.
Photos	

BMP-7, Treatment BMP

Created	2023-02-15 15:28:59 UTC by EPField 01
Updated	2023-06-21 23:08:27 UTC by EPField 01
Location	42.0950194322, -70.89584295
Status	Complete
BMP ID	BMP-7
Date	2023-06-21
Time	11:53
Weather	Warm, Clear
Inspector	Mollie Scott

General Information

BMP Category	Treatment BMP
BMP Type - Treatment	Wet Basin
Address	10 Franklin Hunt Rd Rockland, MA 02370
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

Inlet 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	Wet basin appears generally free of debris and well-maintained.
Photos	

Certification

Authorized Representative (Optional): All reports, including SWPPPs, inspection reports, annual reports, monitoring reports, reports on training and other information required by this permit must be signed by a person described in Appendix B, Subsection 11.A or by a duly authorized representative of that person in accordance with Appendix B, Subsection 11.B. If there is an authorized representative to sign MS4 reports, there must be a signed and dated written authorization.
The authorization letter is:

☐ Attached to this document (document name listed below)

☐ Publicly available at the website below

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

Printed Name

Signature _____ Date

APPENDIX P

Year 5 MCM Memos

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: September 30, 2022

To: David Taylor, Jr., Highway Superintendent, Town of Rockland

From: Natalie Pommersheim – Project Manager, Environmental Partners

CC: Mike Franck – Project Scientist, Environmental Partners

Subject: Minimum Control Measure No. 5 BMP Retrofit Analysis and Priority Municipal Properties

This memorandum summarizes the work completed by Environmental Partners Group, LLC (EP) in accordance with Task 1c of the Agreement for Professional Engineering Services – Municipal Separate Storm Sewer System (MS4) General Permit Assistance for the Town of Rockland.

In accordance with MS4 General Permit section 2.3.6.d, the Town of Rockland is required to develop an inventory of Town-owned properties that could be modified or retrofitted with constructed stormwater best management practices (BMPs). Beginning with the MS4 Year 4 annual report, the Town will need to maintain an inventory of five (5) permittee-owned properties that are candidates for BMP retrofits. The Town will also need to provide a status update of any progress made on all properties that have been modified or retrofitted with BMPs to mitigate impervious cover for each subsequent report submittal.

In this memorandum, EP evaluated all Town-owned properties and developed the initial inventory of five permittee-owned properties identified for BMP retrofit opportunities.

IDENTIFICATION OF POTENTIAL BMP LOCATIONS

Section 2.3.6.d of the MS4 Permit requires that permittees identify a minimum of five (5) permittee-owned properties that could potentially be modified of retrofitted with BMPs designed to reduce the frequency, volume, and pollutant loads of stormwater discharges to and from its MS4. The permit requires that permittees consider properties with significant impervious cover as well as access to maintenance, subsurface geology, depth to water table, proximity to aquifers, and subsurface infrastructure.

The Town of Rockland maintains the municipal properties inventoried in Table 1, below. This inventory includes only properties that are located within the MS4 Urbanized Area and receive stormwater from on site and/or nearby roadways. In the case of Rockland, the MS4 Urbanized Area encompasses the whole Town, so all Town-owned properties were considered during this analysis.

Table 1: List of Town-owned Properties

Facility name	Address
Benjamin Phelps Elementary School	1 Lt Col Brian Duffy Way
Rockland Recycling Center and Landfill	1000 Beech Street
Rockland Highway Department	841 Market Street
Jefferson Elementary School	93 George Street
Rockland Police Department	490 Market Street
North River Collaborative	198 to 240 Spring Street
Rockland Sewer Commission	587 Summer Street
R Stewart Esten School	733 Summer Street
Memorial Park Elementary School	1 Brian Duffy Way
Rockland Town Offices	242 Union Street
Rockland Fire Department	360 Union Street
Abington & Rockland Joint Water Department	835 Hingham Street
Rockland Memorial Library	20 Belmont Street
Rockland Youth Commission	394 Union Street
Robert J. Nyman Rockland Senior Center	317 Plain Street
Rockland Senior High School	52 Mackinlay Way

RANKING OF POTENTIAL BMP LOCATIONS

EP performed a high-level analysis of the facilities listed above. This analysis included site visits to all the facilities to observe site conditions and occurrence of any stormwater management systems or facilities. EP also used the Natural Resources Conservation Service (NRCS) Soil Survey data to assess soil conditions at each facility to understand if the soils are appropriate for the installation of stormwater best management practices. Specifically, EP reviewed the mapped soil consistency, hydrologic soil group, and estimated seasonal high groundwater depth. EP reviewed online Geographic Information System (GIS) data layers stored on the Town of Rockland's GIS system as well as MassGIS.

Furthermore, EP reviewed whether each site was located within a regulated area, such as a Zone I or Zone II Area of a public drinking water supply or a wellhead protection area. EP reviewed the amount of impervious surface on site, including the number of parking spaces, to understand the amount of vehicle trips that may be generated by each site. EP also compared each location based on the Town of Rockland catchment rankings determined as part of the development of the IDDE

Plan last updated in 2021. Land use, and the intensity of development and potential to generate pollutants was also considered.

In accordance with Appendix H Part I.1.a.i.2, the Town must also include consideration of BMPs to reduce phosphorus discharges due to the phosphorus impairment of French Stream. Phosphorus export calculations for each outfall-catchment were completed in the Town's Nutrient Source Identification Report (NSIR). That report studies outfall-catchments within the contributing catchments that flow to French Stream for siting BMP retrofits, whereas this report looks at municipal properties throughout the Town. The Town should consider these two plans distinct and different in aim, but complementary.

EP prepared a ranking matrix incorporating the factors described above. EP found that only one property listed in Table 1, Rockland Senior High School, contained existing stormwater management BMPs. The North River Collaborative is the only facility that discharges runoff directly to an impaired waterbody: French Stream. The Abington & Rockland Joint Water Department is the only facility located within a public water supply protection zone for groundwater or surface water. Most facilities include no mapped piped drainage, and no facilities receive discharge from MS4 Outfalls. Soil conditions throughout the Town, based on the NRCS Soil Survey, are generally mixed between hydrologic soil groups A, B, D, and dual soils. Of the 16 facilities, only two (2) or (12.5 percent) of the facilities contain some well-draining group A soils and a seasonal high groundwater of greater than 80 inches below ground surface, according to NRCS estimates. Therefore, suitable soils exist in select areas of Town for the installation of stormwater management facilities. Soil infiltrative characteristics and groundwater conditions require further investigation to confirm suitability for stormwater BMPs.

EP made judgements regarding whether a particular property contained a high, medium, or low potential to generate pollutants, and are presented with that designation below as well as in Attachment 1.

The following properties were rated **high** due to the amount of impervious surface, vehicle travel, facility operations, presence of stockpiles, storage, washing and open space that is maintained, irrigated, fertilized, and chemically treated:

- Benjamin Phelps Elementary School,
- Rockland Recycling Center and Landfill,
- Rockland Highway Department,
- Jefferson Elementary School,
- Rockland Police Department,
- North River Collaborative,
- Rockland Sewer Commission,
- R Stewart Esten School,
- Memorial Park Elementary School,
- Rockland Town Offices,
- Rockland Fire Department, and
- Rockland Senior High School

The following properties were rated **medium** due to the amount of impervious surface on site including parking spaces and vehicle travel contributing to moderate nutrient loading:

- Abington & Rockland Joint Water Department,
- Rockland Memorial Library,
- Rockland Youth Commission, and
- Robert J. Nyman Rockland Senior Center.

All facilities included in this analysis were considered high or medium loading.

Based on the criteria described above, and based on conversations held with the Town, EP has prioritized the following facilities for the development of stormwater Best Management Practices. The list is ordered from highest to lowest priority for BMP retrofits.

1. Benjamin Phelps Elementary School,
2. Rockland Recycling Center and Landfill,
3. Rockland Highway Department,
4. Jefferson Elementary School, and
5. Rockland Police Department.

Please see the accompanying spreadsheet in Attachment 1 to review the considerations and criteria used to determine this ranking. These locations are also shown in Attachment 2.

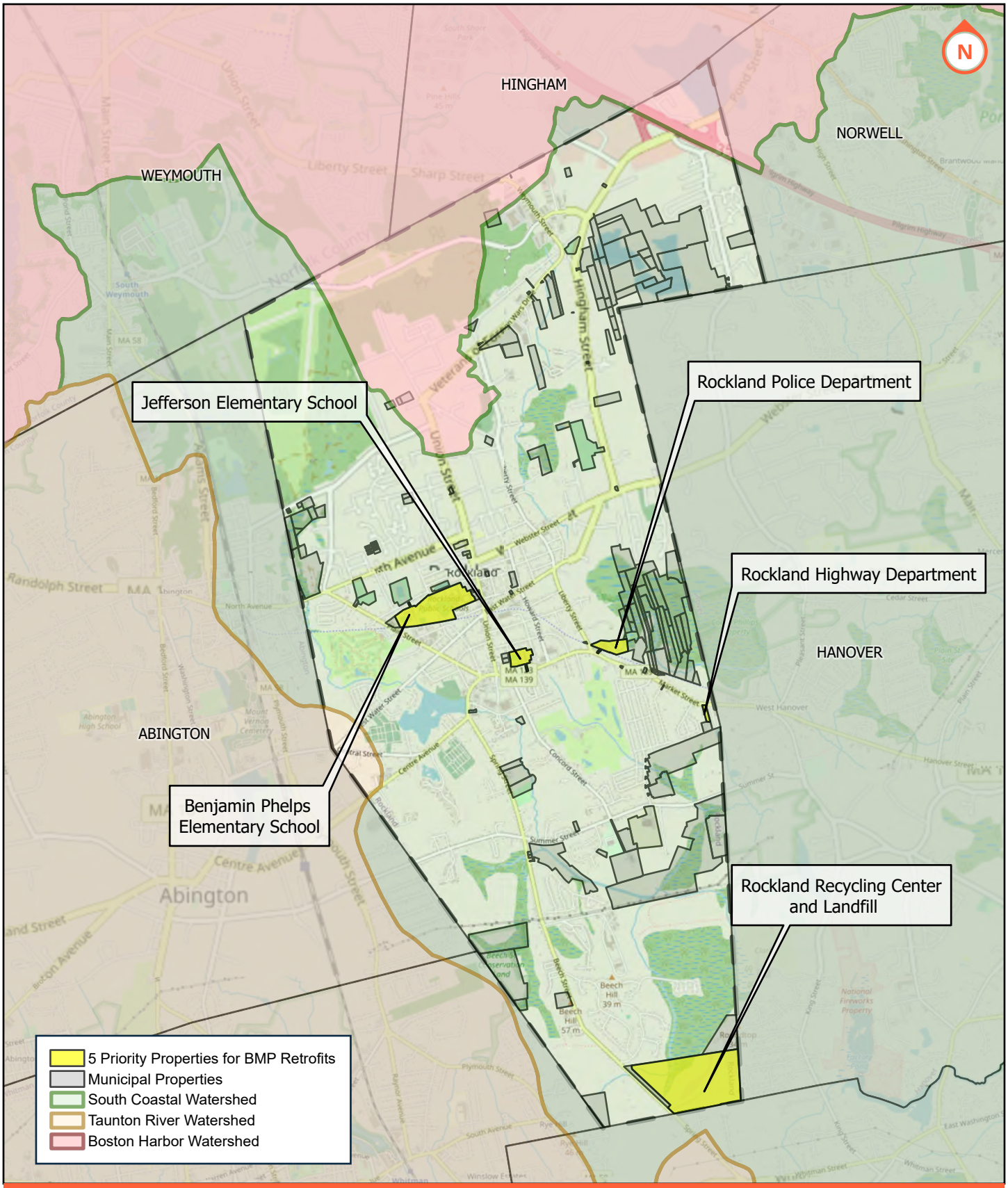
Attachments

Attachment 1: Table of Priority Ranking of Municipal Properties for BMP Retrofits
Attachment 2: Figure of All Municipal Properties and Five Priority Properties for BMP Retrofits

Facility Name	Address	Outfall-catchment priority	Receiving water	Potential pollutant loading	Subsurface geology	Hydrologic Soil Group	Estimated depth to water table (in)	Proximity to public water supply zones	Existing stormwater BMPs	Notes	Discharges to impaired water
Benjamin Phelps Elementary School	1 Lt Col Brian Duffy Way	None	None	High	Udorthents, loamy - B Udorthents, Urban land complex - B	B	>200	No	No	Suggested by Town to be suiltable location for BMP retrofits due to school being in construction phase.	No
Rockland Recycling Center / Landfill	1000 Beech Street	None	None	High	Udorthents, refuse substratum - B Freetown muck - B/D Deerfield loamy fine sand - A Mattapoisett loamy sand, extremely stony - D	B, B/D, D	Between 0 and 64	No	No	No catch basins or closed drainage infrastructure by recylcing center. Ponding likely, based on layout of site. Side lot slopes toward wooded area to left of entrance, rip rap pad on slope noted. Newly paved road beyond recycling center does have closed drainage infrastructure (CBs). Visible ponding at dump sites for yard and brush waste meaning runoff is likely high in phosphorus	No
Rockland Highway Department	841 Market Street	None	None	High	Urban land, outwash substratum - D	D	>200	No	No	Mostly impervious with high amount of incoming and outgoing traffic, daily. High loading parcel with equipment storage, high impervious, uncontrolled storage/waste disposal. Adequate distance to groundwater.	No
Jefferson Elementary School	93 George Street	None	None	High	Merrimac fine sandy loam - A Urban land, outwash substatum - D Raynham silt loam - C/D	A, C/D, D	Between 10 and >200	No	No	Large property with high amount of impervious surface. Roof runoff flows freely off roof onto paved swale and then directly into courtyard. Courtyard graded so that all runoff flows into single CB in courtyard. Retrofitting the CB may be ideal due to potential for phosphorus and TSS accumulation. No visible roof drainage on multi-story parts of building, no visible drainage in other parking areas. A&D Soils, adequate distance to groundwater.	No
Rockland Police Department	490 Market Street	None	None	High	Urban land, wet substratum - D Freetown muck - B/D Massasoit - Mashpee complex - D	B/D, D	Between 0 and >200	No	None	No visible CBs or BMP onsite noted during field investigation. Roof gutters discharge to stone strip, leading to curb break, allowing flow straight onto parking area. Sight generally slopes to rear, runoff would flow freely off parking area. B/D and D soils are not ideal, but it does have adequate distance to groundwater.	No

Facility Name	Address	Outfall-catchment priority	Receiving water	Potential pollutant loading	Subsurface geology	Hydrologic Soil Group	Estimated depth to water table (in)	Proximity to public water supply zones	Existing stormwater BMPs	Notes	Discharges to impaired water
North River Collaborative	198 to 240 Spring Street	None	French Stream - impaired for phosphorus	High	Udorthents, loamy -B Massasoit - Mashpee complex - D Sudbury fine sandy loam - A/D	A/D, B, D	Between 0, 51 and >200	No	No	No CBs or BMPs noted onsite. Larger building has roof gutter system which is discharging freely onto pavement. Soil erosion indicates runoff from parking area flows freely toward rear of property. Mostly B Soils and adequate distance to groundwater.	Yes - French Stream
Rockland Sewer Commission	587 Summer Street	None	None	High	Udorthents, wet substratum - B/D Deerfield loamy fine sand - A Freetown muck - B/D Swansea muck - B/D	A, B/D	Between 0, 51 and 64	No	No	High loading potential with it being a wastewater treatment plant. A and B/D soils are suitable for BMP retrofits, but distance to groundwater is not ideal.	No
R Stewart Esten School	733 Summer Street	None	None	High	Urban land, outwash substratum - D Merrimac fine sandy loam - A Deerfield loamy fine sand - A Swansea muck - B/D	A, B/D, D	Between 0, 64 and >200	No	No	Substantial amount of impervious and lots of incoming and outgoing traffic due to it being a school. CBs noted but not BMPs observed onsite. Side parking lot has very wide drive aisles that could be reduced in size. Catch basins at front and back left corner, slight ridge noted in middle of parking area. Portion of runoff from rear of side parking area appears to bypass CB and flows off parking area to rear (near soccor fields). Some A soils and adequate distance to groundwater.	No
Memorial Park Elementary School	1 Brian Duffy Way	None	None	High	Woodbridge fine sandy loam - C/D	C/D	18	No	No	Most of parcel is impervious. C/D soils are not ideal and there is not adequate distance to groundwater.	No
Rockland Town Offices	242 Union Street	None	None	High	Urban land, till substratum - D Urban land-Paxton complex - D	D	>200	No	No	Frontyard almost entirely impervious with cement pavers and bricks, some landscaped islands but they are mulched/raised. Only street parking in front. No CBs or drainage infrastructure seen in front yard, runoff appears to slope down into road and is captured by CBs in road. No BMPs noted onsite. No visible roof drainage. Dumpster area paved and graded such that it would runoff into catch basins. CBs may be routed to nearby high school BMPs, which would mean the majority of this property is already treated.	No

Facility Name	Address	Outfall-catchment priority	Receiving water	Potential pollutant loading	Subsurface geology	Hydrologic Soil Group	Estimated depth to water table (in)	Proximity to public water supply zones	Existing stormwater BMPs	Notes	Discharges to impaired water
Rockland Fire Department	360 Union Street	None	None	High	Urban land, till substratum - D	D	>200	No	No	Relatively small parcel, large building but minimal paved area outside the building itself. Floor drains appear to capture runoff/truck washing within the building and not runoff onto street. No CBs or BMPs noted outside of the building. Very little room to work with for regrading purposes. D soils are not ideal, but adequate distance to groundwater.	No
Abington & Rockland Joint Water Department	835 Hingham Street	None	Abington-Rockland Reservoir	Medium	Udorthents, gravelly - B	B	>200	Parcel overlaps with Zone A and Zone B Surface Water Protection Areas	No	Small amount of impervious, relative to the size of this parcel.	No
Rockland Memorial Library	20 Belmont Street	None	None	Medium	Urban land, till substratum - D	D	>200	No	No	Parcel is mostly impervious. D soils are not ideal for BMP retrofits.	No
Rockland Youth Commission	394 Union Street	None	None	Medium	Urban land, till substratum - D	D	>200	No	No	Mostly impervious, heavy amount of incoming and outgoing traffic on a daily basis.	No
Robert J. Nyman Rockland Senior Center	317 Plain Street	None	None	Medium	Woodbridge fine sandy loam - C/D	C/D	46	No	No	Most of parcel is impervious surface. Depth to groundwater is not ideal.	No
Rockland Senior High School	52 Mackinlay Way	None	None	High	Paxton fine sandy loam - C Udorthents, loamy - B Udorthents - Urban land complex - B Urbal land, till substratum - D Urban land-Paxton complex - D Woodbridge fine sandy loam - C/D	B, C, C/D, D	Between 24, 46 and >80	No	3 BMPs currently on this property	Property not ideal for BMP retrofits due to having 3 BMPs currently onsite.	No

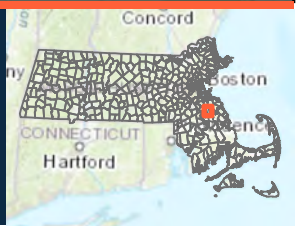


ENVIRONMENTAL PARTNERS
— An Apex Company —

All Municipal Properties and Five Properties for BMP Retrofits

Rockland, Massachusetts

0 0.25 0.5 1 Miles



ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: August 30, 2022

To: Mr. Dave Taylor, Jr., Highway Superintendent, Town of Rockland

From: Scott Turner, PE, AICP, LEED AP ND, Environmental Partners

CC: Natalie Pommersheim, Environmental Partners
Jesse O'Donnell, PE, Environmental Partners

Subject: **Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit Green Infrastructure Memorandum**

Introduction

This memorandum is regarding Section 2.3.6.c of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit. This section requires permittees to "develop a report assessing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist:

i. Green roofs;
ii. Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
iii. Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.

The assessment should indicate if the practices are allowed in the MS4 jurisdiction and under what circumstances are they allowed. If the practices are not allowed, the permittee shall determine what hinders the use of these practices, what changes in local regulations may be made to make them allowable, and provide a schedule for implementation of recommendations. The permittee shall implement all recommendations, in accordance with the schedules, contained in the assessment."

Environmental Partners, at the request of the Town of Rockland, has reviewed Rockland's existing local regulations and performed an assessment regarding the viability for implementing or allowing

the above-described green infrastructure practices. Specifically, Environmental Partners reviewed the following development regulations:

- Town of Rockland General Bylaws
  - Chapter 338 Stormwater Management
  - Chapter 342 Streets and Sidewalks
- Town of Rockland Zoning Bylaws
  - Chapter 407 Wetlands Protection
  - Chapter 415 Zoning (the "Zoning Bylaw")
- Rules and Regulations of the Planning Board of the Town of Rockland Massachusetts Under the Subdivision Control Law (the "Subdivision Regulations")

With regard to the items listed in Section 2.3.6.c of the MS4 Permit, we have the following comments.

Green Roofs

Although green roofs serve a stormwater management function, their design and construction is typically regulated under State and local building codes. Upon a review of all the Rockland bylaws and regulations listed above, we did not find any regulations pertaining to the design or construction of green roofs.

Requirements or promotion of green roofs in Rockland would likely include an additional bylaw or regulation specific to green roofs. In addition, requirements for the use of Green Roofs as a stormwater management practice would most likely require additional specific language regarding green roofs in the Rockland Stormwater Management Bylaw. Due to the complex nature of constructing green roofs, including impacts to the design of building structural and rooftop elements, specific guidance would need to be developed for the design, construction, and maintenance of these structures.

Infiltration Practices

Rockland's various bylaws and regulations contain minimal references to infiltrative practices. No references to infiltrative practices were located in the Wetlands Protection Bylaw (Chapter 407) nor the Streets and Sidewalks Bylaw (Chapter 342). The Stormwater Management Bylaw (Section 338 of the General Bylaws) defines infiltration as "the act of conveying surface water into the ground to permit groundwater recharge and the reduction of stormwater runoff from a project site." Recharge is also defined as "the process by which groundwater is replenished by precipitation through the percolation of runoff and surface water through the soil." Aside from these two definitions, the Stormwater Management Bylaw contains no other references to low impact development (LID) strategies or any of the infiltrative practices in Section 2.3.6.c. of the MS4 Permit.

Section 415-72 of the Rockland Zoning Bylaw pertains to Planned Residential Developments for Seniors and requires drainage infrastructure to be designed so that groundwater recharge is

maximized. This is a green infrastructure strategy. No other mention of groundwater recharge, infiltrative practices, or LID strategies are made in the Zoning Bylaw.

Of Rockland's various regulations, the Subdivision Regulations contain the most references to infiltrative practices. Section III.C.2.e. of the Subdivision Regulations pertains to the design of drainage conveyance infrastructure. Most of the features covered in this section are for closed drainage conveyance systems, such as pipes, catch basins, manholes, culverts, and headwalls. Grassed swales are included as another conveyance strategy and are required to be designed to accommodate the 100-year storm. Velocities in grassed swales are required to remain below 6 feet per second to enhance infiltration and contaminant removal. These design requirements are effective low impact development (LID) strategies. However, the design parameters pertaining to the design of grassed swales are primarily regarding conveyance and not infiltration.

Section III.C.2.f. of the Subdivision Regulations covers drainage basins and contains several infiltrative and LID strategies. The bottom of all stormwater basins in definitive subdivisions are required to be vegetated to promote infiltration and the removal of contaminants. Additionally, pretreatment practices are required to remove contaminants prior to the discharge of runoff into all stormwater basins in subdivisions, which is more stringent than the Massachusetts Stormwater Management Regulations (the "state standards"), which requires pretreatment only for specific land uses with high pollutant loads, rapidly infiltrating soils, or wellhead protection. Listed pretreatment options in the Subdivision Regulations include lined siltation basins, sediment forebays, and oil/grit separator units. Parking lot drains receiving more than 1,000 square feet of paved area are required to be equipped with oil/grit separators, which is also more stringent than the state standards. Lastly, basins are required to retain the 100-year design storm with at least one foot of freeboard at the maximum water level, which is more stringent than the state standards and ensures that the entire volume of runoff entering the basin for the 100-year storm eventually infiltrates into the soil below within 72 hours. These are effective LID strategies which limit the flow of untreated runoff to resource areas.

Section IV of the Subdivision Regulations covers Construction Specifications. This section highlights installation strategies primarily for the infrastructure built as part of the typical roadway cross section. Construction techniques for stormwater infrastructure is reserved for closed drainage infrastructure such as pipes, subdrains, catch basins, manholes, and outfalls. The installation of shade trees, grass plots, retaining walls, and sidewalks is also covered in this section. No references to LID practices or infiltrative BMPs are mentioned.

For clarity, we recommend the Subdivision Regulations, Stormwater Management Bylaw, and the Zoning Bylaw be revised to include of the LID practices listed in Section 2.3.6.c. of the Massachusetts MS4 Permit.

Rainwater Harvesting

Rainwater harvesting is the collection, storage, and eventual reuse of rainwater for use as irrigation or industrial process water. Rainwater reuse systems can be used on small scales, such as collecting water from residential home downspouts, or on a much larger scale including collecting water from

large industrial buildings. Rainwater harvesting and reuse is not specifically identified in any of the Town of Rockland's regulations and bylaws.

We did not see any additional specific references to rainwater harvesting or reuse in other areas of the Stormwater Management Bylaw or Regulations, the Zoning Bylaw, or Land Subdivision Regulations. Since all large site developments and definitive subdivisions that include over an acre of land disturbance require a stormwater management permit, they are required to comply with the requirements of the Stormwater Management Bylaw.

Conclusions

Section 2.3.6.c of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit requires permittees to "develop a report assessing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist:

- Green roofs;
- Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
- Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.

The Rockland bylaws and regulations contain references to and design standards for some infiltrative practices in select locations, but generally do not identify design standards relating to the implementation of the low impact development (LID) infiltrative practices specifically mentioned in the MS4 Permit. The Stormwater Management Bylaw defines infiltration and recharge and states a primary objective to "establish minimum construction and post-construction stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality." Despite this objective, the Stormwater Management Bylaw contains no section dedicated to design standards for stormwater infrastructure.

In our opinion, the Subdivision Regulations' LID standards for grassed swales and stormwater basins can broadly be applied to all development work in Rockland and similar language should be incorporated into Article III of the Stormwater Management Bylaw. The Subdivision Regulations' runoff volume requirements for stormwater basins in definitive subdivisions are much more stringent than the state standards. Additionally, the Town should include the LID practices required by Section 2.3.6.c. of the MS4 Permit into the Stormwater Management Bylaw and support these inclusions with design standards, as required by the MS4 Permit.

The Rockland Zoning Bylaw contains one reference to infiltrative stormwater practices in Section 415-72, which requires groundwater recharge to be maximized in Planned Residential Developments for Seniors. In our opinion, the Zoning Bylaw should be amended to more generally direct applicants to incorporate the LID practices required by Section 2.3.6.c. of the MS4 Permit into their site designs. This could be accomplished by adding a section into the Zoning Bylaw, or by

referencing the newly amended sections of the Stormwater Management Bylaw consistent with our recommendations above.

Section 415-72 of the Rockland Zoning Bylaw pertains to Planned Residential Developments for Seniors and requires drainage infrastructure to be designed so that groundwater recharge is maximized. This is a green infrastructure strategy. No other mention of groundwater recharge, infiltrative practices, or LID strategies are made in the Zoning Bylaw.

The Rockland Subdivision Regulations were promulgated in 1976 and have recently been amended in 2006. Stormwater management approaches and design standards have changed considerably since 1976, and the current Subdivision Regulations generally reflect these changes. While the Subdivision Regulations mostly cover closed collection and conveyance stormwater infrastructure, there have been sections amended into the regulations that favor LID stormwater practices.

We recommend the Town to include the LID practices of Section 2.3.6.c. of the MS4 Permit into Section II of the Subdivision Regulations pertaining to design standards.

We recommend Section IV—Construction Specifications—of the Subdivision Regulations be revised to include LID installation guidelines. In addition to the guidelines provided in this section for closed drainage infrastructure, grass plots, retaining walls, and sidewalks, we encourage the Town to incorporate installation specifications in this section relating to the LID practices of Section 2.3.6.c. of the MS4 Permit, such as curb extensions, pervious pavements (for sidewalks), grassed swales, and augmented soils.

EP understands these recommendations and possible changes have impacts greater than stormwater management. We recommend the Town of Rockland consider these changes, consistent with the requirements of the MS4 permit.

Please call if you have any questions regarding these items.

ENVIRONMENTAL PARTNERS
— An Apex Company —

MEMORANDUM

Date: August 30, 2022

To: Mr. Dave Taylor, Jr., Highway Superintendent, Town of Rockland

From: Scott Turner, PE, AICP, LEED AP ND, Environmental Partners

CC: Natalie Pommersheim, Environmental Partners
Jesse O'Donnell, PE, Environmental Partners

Subject: **Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit Impervious Surface Memorandum**

Introduction

This memorandum is regarding Section 2.3.6.b of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit. This section requires permittees to "develop a report assessing local current street design and parking lot guidelines that affect the creation of impervious cover. This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options."

Environmental Partners, at the request of the Town of Rockland, has reviewed Rockland's existing local regulations that affect the creation of impervious cover. Specifically, Environmental Partners reviewed the following development regulations:

- Town of Rockland General Bylaws
  - Chapter 338 Stormwater Management
  - Chapter 342 Streets and Sidewalks
- Town of Rockland Zoning Bylaws
  - Chapter 407 Wetlands Protection
  - Chapter 415 Zoning (the "Zoning Bylaw")
- Rules and Regulations of the Planning Board of the Town of Rockland Massachusetts Under the Subdivision Control Law (the "Subdivision Regulations")

With regard to the items listed in Section 2.3.6.b of the MS4 Permit, we have the following comments.

Design guidelines and performance standards that affect the creation of impervious cover in Rockland are generally included in the Town of Rockland Zoning Bylaw, Subdivision Regulations, and

Stormwater Management Bylaw. The Town's Wetlands Protection Bylaw and Streets and Sidewalks Bylaw generally do not pertain to the creation of impervious surfaces.

Zoning Bylaw

The Rockland Zoning Bylaw was adopted March 4, 1958 and is amended through May 7, 2018. Consistent with most municipalities in Massachusetts, Rockland's parking standards and requirements are addressed in the Zoning Bylaw. Section 415-35 of the Zoning Bylaw includes minimum required off-street parking spaces by use. This section includes parking minimums for each use, which often results in the construction of more parking spaces – and impervious surfaces – than are necessary. Many towns are revising their parking requirements to allow applicants to provide only the amount of parking that is necessary, preventing unnecessary parking spaces from being constructed, when presented with acceptable parking data. This approach has been implemented in the 37.5-acre Downtown Rockland Revitalization Overlay District (DRROD), as covered in Section 415.21.2.H.(5), where the minimum number of parking spaces listed per use in the DRROD may receive a waiver by the Planning Board if the proposed use:

- Will not result in or worsen parking or traffic problems in proximity to the project.
- Demonstrates to the reasonable satisfaction of the PAA that a lesser amount of parking will not cause excessive congestion, endanger public safety, or that lesser parking will provide positive environmental or other benefits.
- Is a mixed-use development that demonstrably has separate peak parking demands for multiple noncompeting uses.

Some municipalities are also including parking maximums. In these cases, applicants typically demonstrate they can provide the parking described in the Zoning Bylaw but only construct the parking that is needed to support and service the development.

The DRROD contains other regulations limiting impervious coverage. Section 415.21.2.M. contains a subsection pertaining to the landscaping of parking lots, requiring planting strips not less than 10 feet wide around parking lots, and landscape islands internal to parking lots not less than 6 feet wide. These requirements are designed to ensure plant health, provide area for snow removal, and to break up the impervious surfaces on-site to mitigate the visual impact of parking. This is a green infrastructure strategy.

Per Section 415.21.2.H.(3), shared parking is allowed in the DRROD between a development and an *intermittent use establishment*, such as a church, assembly hall, or theater, whose peak parking demand is only at night or on Sundays. When an intermittent use establishment is nearby a use whose peak demand is during the day, a shared parking arrangement may be formed and executed by the participating parties to the satisfaction of the Planning Board. This is an effective measure to limit excessive parking lot area, thereby reducing impervious coverage.

These DRROD sections of the Zoning Bylaw give applicants and the Planning Board the flexibility to avoid excessive parking spaces, create shared parking arrangements with intermittent use establishments, and provide extensive landscaping areas in and surrounding parking lots. These stipulations reduce impervious surfaces, resulting in a reduction of stormwater impacts. This is a

forward-looking approach to parking lot design that should be studied – and applied – in other zoning districts in Rockland.

Section 415-22 of the Zoning Bylaw contains Building and Lot Regulations. Properties are permitted to have up to 30% of parking spaces on-site designed as compact spaces sized at 9 feet by 18 feet. Section 415-53 defines a "compact car" as having dimensions of 8.5 feet by 16 feet, or less. Those spaces not classified as compact spaces are required to have dimensions of at least 10 feet by 20 feet or 9 feet by 18 feet with a back-up area of 23 feet. Many towns in Massachusetts have standard parking spaces with minimum dimensions of 9 feet by 18 feet. Not all municipalities in Massachusetts have compact parking allowances, but municipalities that do so typically allow for space dimensions smaller than the 9 feet by 18 feet specified in the Rockland Zoning Bylaw. Smaller parking spaces reduce the amount of impervious coverage, thereby reducing stormwater impacts.

The dimensional table in Section 415-22 contains a column for maximum building coverage on lots in Rockland. While limiting building coverage is a strategy to reduce impervious cover, many towns in Massachusetts limit *overall* impervious coverage on lots. Overall lot coverage maximums can be effective in preventing applicants from developing more paved driveways, parking lots, sidewalks, and paved plazas than are necessary. Currently, Rockland does not enforce maximum lot coverage for the various zoning districts in the Zoning Bylaw. Minimum open space requirements in select circumstances are present in the Zoning Bylaw, such as for multi-family developments, shopping centers, planned residential developments for seniors, and planned unit developments, which does effectively limit the amount of impervious coverage in these developments.

In general, the Rockland Zoning Bylaw provides limited flexibility to reduce the generation of impervious area in some of the town's zoning districts. The DRROD in particular contains several pathways allowing applicants and the Planning Board to reduce impervious coverage. We have developed several recommendations for the Town in the Conclusions section below to evaluate and amend the Zoning Bylaw in a manner that is consistent with the objectives of the Massachusetts MS4 Permit.

Subdivision Regulations

The Rockland Subdivision Regulations were promulgated in 1976 and last amended in September 2006, which is prior to the revised Massachusetts Stormwater Standards that were issued in 2008. In the years following the adoption of the Subdivision Regulations in 1976, stormwater management consisted primarily of closed collection and conveyance systems with little treatment or infiltration. Planning trends, such as utilizing pervious pavement or reducing impervious surfaces for the purposes of reducing stormwater runoff, were generally not considered. While the term "impervious" is not defined or mentioned in the Rockland Subdivision Regulations, several sections of the document pertain to the reduction of impervious coverage.

Section I.H. of the Subdivision Regulations regulates Planned Unit Developments (PUDs) in Rockland. Section I.H.2. requires landowners of PUDs to provide and maintain a 50-foot buffer zone from all external lots lines except that portion which fronts an existing external roadway. The buffer limits impervious coverage around the perimeter of PUDs and is required to be kept in its natural state where wooded or vegetated.

The limitation of impervious coverage in PUDs is required in the land use density requirements of I.H.6., which limits the amount of dwelling units per acre, the common recreation area requirements of I.H.7., and the open space requirements of I.H.8. Section I.H.9. pertains to off-street parking and circulation in PUDs, and allows the Planning Board to reduce the number of off-street parking spaces (up to 20%) after review and written approval by the engineer and Planning Consultant. Additionally, this section allows mixed uses within a single building in a PUD to share parking facilities to the satisfaction of the Planning Board if the applicant can demonstrate that peak parking demands for the mixed uses are staggered.

Section III.B.4. pertains to dead end streets. The length of dead-end streets is limited to 600 feet and the outside roadway diameter of the turnaround is required to be at least 100 feet. There is no language requiring planted landscape islands at the center of cul-de-sacs, which is required in some municipalities.

There are no references within the Subdivision Regulations to pervious pavements. All references are to standard concrete or bituminous concrete pavement. Section IV.F. covers concrete and bituminous concrete sidewalks and does not mention pervious pavements.

Table 1 of Appendix B of the Subdivision Regulations contains required pavement widths for each type of roadway as follows: 26 feet for local residential streets, 30 feet for residential feeder streets, 36 feet for industrial primary streets, and 30 feet for industrial secondary streets. Section III.B. defines *local residential streets* as providing access to a maximum of 10 residential parcels, *residential feeder streets* as serving general residential areas connecting local streets, *primary industrial streets* as a major access into a commercial or industrial district, and all other streets in commercial or industrial districts as *secondary industrial streets*. While we consider the industrial street widths to generally be consistent with those in other nearby municipalities, the residential street widths are wider than those of some nearby towns. Reducing the width of residential streets would limit impervious surface and reduce stormwater impacts.

In summary, the Rockland Subdivision Regulations offer the Planning Board several ways to reduce impervious areas in Planned Unit Developments (PUDs). Additional methods to reduce impervious cover are recommended in the Conclusions section below.

Stormwater Management Bylaw

Chapter 338 of the Town Bylaws pertains to Stormwater Management. This Bylaw was recently passed by the Town of Rockland in May 2018. Other than the Definitions Section, which defines *impervious surface*, there is no direct mention of impervious surface within the Bylaw. One of the objectives of the bylaw is to define standards for the regulation and control of stormwater runoff quality and quantity, which generally reflects the objectives of the Massachusetts MS4 Permit.

Conclusions

Section 2.3.6.b of the Massachusetts Small Municipal Separate Storm Sewer System (MS4) Permit requires permittees to “develop a report assessing local current street design and parking lot

guidelines that affect the creation of impervious cover. This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options."

In our opinion, the objectives of the Rockland Zoning Bylaw, Subdivision Regulations, and Stormwater Management Bylaw are generally consistent with the intent of the MS4 Permit, but should be revised to contain more actionable guidelines to limit impervious coverage.

We recommend the Town amend Section 415-35 of the Zoning Bylaw, pertaining to off-street parking, to allow for the reduction of minimum parking standards when acceptable data is presented demonstrating less parking than that which is required is sufficient to support the proposed use. This relief could be allowed similar to the parking relief regulations in the Downtown Rockland Revitalization Overlay District (DRROD). Allowing a reduction of parking by-right, rather than via a discretionary Special Permit, would provide an easier method for providing less parking.

Additionally, we recommend the Town reconsider the standard dimensions listed for parking spaces. In Section 415-22 of the Zoning Bylaw, compact vehicle parking spaces are required to be at least 9 feet by 18 feet, while other "full size" vehicle parking spaces are required to be at least 10 feet by 20 feet. Municipalities that offer compact parking allowances typically assign compact parking spaces with sizes smaller than the 9 feet by 18 feet required in Section 415-22. For example, Andover classifies compact parking spaces as 8 feet by 16 feet and standard parking spaces as 9 feet by 18 feet. In our opinion, the Town should reduce the dimensions defined for both full-sized and compact vehicles in Section 415-22 of the Zoning Bylaw, and should only allow 10 by 20-foot spaces for select uses, if needed. Dimensional reductions to parking spaces, if implemented into the Zoning Bylaw, should also be implemented into relevant sections Subdivision Regulations as deemed appropriate, such as the 10-foot by 20-foot spaces required in Planned Unit Developments in H.9.

The Town may consider allowing off-street parking spaces to be constructed using pervious pavements rather than traditional pavement.

Many municipalities in Massachusetts reduce impervious surfaces by assigning limits to impervious coverage as a percentage of lot area within zoning districts. Currently, Rockland only limits the area of buildings as a percentage of lot area, per the table in Section 415-22 of the Zoning Bylaw. Neglecting to restrict overall impervious coverage can result in the development of excessive impervious areas such as large plazas and additional driveways within developments. We recommend the Town evaluate maximum impervious coverage percentages for each of its zoning districts and implement these requirements in a new column of the dimensional table of Section 415-22. Assigning maximum lot coverage percentages would complement the minimum open space requirements currently established for multi-family developments, shopping centers, planned residential developments for seniors, and planned unit developments, but would be a broader measure, as doing so would apply to all developments within the Town's various zoning districts.

To limit the generation of impervious surface, we recommend the Subdivision Regulations be revised to require a minimum diameter for all central islands in cul-de-sacs, and that these islands be landscaped with low-lying shrubs. The cul-de-sacs could also be designed to accept stormwater generated by the subdivision road and provide additional Low Impact Development stormwater

management. The Subdivision Regulations could be revised to include pervious pavements for sidewalks. Pervious pavement is not as durable as traditional pavement and in our opinion is not appropriate for travelled ways. However, including pervious pavements for sidewalks will reduce stormwater impacts when compared to traditional pavements.

In our opinion, the required local residential and residential feeder street widths described in the Subdivision Regulations are wider than needed for residential developments. If designed for vehicular traffic only, roadway widths for local residential and residential feeder streets could be reduced to 24 feet. This width is generally consistent with Subdivision Regulations in other municipalities. For example, the Devens Enterprise Commission Design Standards by Street/Road Classification calls for a travel lane width of 9 feet with a 1-foot wide shoulder for local streets with a design speed of 30 miles per hour. This road width is derived from the MassDOT Project Development and Design Guide published in 2006. The Town of Hingham Planning Board Rules and Regulations include a minor road width of 22 feet and a limited residential road width of 18 feet. Reducing the pavement widths would reduce the amount of impervious surface and stormwater generation. When bicycle lanes are incorporated in road designs, additional width (possibly 4-6 feet) could be added to the roadway layout.

For clarity, sections of the Zoning Bylaw and Subdivision Regulations pertaining to land development standards should be amended to refer to the Stormwater Management Bylaw, ensuring the strategies described in the Stormwater Management Bylaw are incorporated into future site designs.

Please call if you have any questions regarding these items.

ENVIRONMENTAL PARTNERS

— An Apex Company —

1900 Crown Colony Drive, Suite 402

Quincy, MA 02169

P: 617.657.0200 F: 617.657.0201

envpartners.com