Stormwater Management Program (SWMP) Plan

Town of Lynnfield, Massachusetts

June 30, 2019
(revised November 23, 2021)

Prepared For:

Town of Lynnfield
55 Summer Street
Lynnfield, MA 01940

Prepared By:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740

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Stormwater Management Program (SWMP) Plan 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."

Name: _____ Title: _____

Signature: _____ Date: _____

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1 Introduction

Lynnfield is one of many Massachusetts communities regulated under the Environmental Protection Agency's (USEPA) National Pollutant Discharge Elimination System (NPDES) Phase II rule (40 CFR 122). The rule requires regulated operators of municipal separate storm sewer systems (MS4) to develop a Stormwater Management Program (SWMP) and Best Management Practices (BMPs) to reduce the impacts of stormwater discharges. The requirements are outlined in the NPDES General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, which was signed on April 4, 2016, with an effective date of July 1, 2018, hereinafter referred to as the 2016 MS4 Permit.

This SWMP Plan describes and details the activities and measures that will be implemented to meet the terms and conditions of the permit.

1.1 Regulatory Background

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

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

The 2016 MS4 Permit was signed on April 4, 2016 with an effective date of July 1, 2018. The permit was cosigned by the Massachusetts Department of Environmental Protection (MassDEP) and thus is jointly regulated by EPA and MassDEP.

1.2 MS4 Program Requirements

This permit requires each regulated community to submit a Notice of Intent (NOI) briefly outlining how it will meet the 6 Minimum Control Measures (MCMs) and impaired waters requirements of the permit and requesting authorization to discharge under the new permit.

The six MCMs 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); and
6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations.

Permittees must also address water quality impacts from waterbodies with approved Total Maximum Daily Loads (TMDLs) and certain impairments, generally known as water quality limited waterbodies.

As required by the 2016 MS4 Permit, The Town of Lynnfield submitted a NOI and required accompanying information, including endangered species, historic preservation, and an outfall map to EPA Region 1 by the September 29, 2018 deadline (**Appendix A**) requesting authorization to discharge under the new permit. Lynnfield received official authorization to discharge stormwater from its MS4 as per the letter from USEPA provided in **Appendix A**. Authorization to discharge expires on June 30, 2022.

This Stormwater Management Program (SWMP) Plan has been developed by the Town of Lynnfield to detail the activities and measures outlined in the NOI to address the requirements of the 2016 MS4 Permit. This SWMP Plan documents BMPs, plans, activities, and measures that have been implemented to date, those that are ongoing, and those proposed for the future to comply with the 2016 MA MS4 Permit. This is a "living" document and will be updated and/or modified as required during the permit term as the Town's activities are modified, changed or updated to meet permit conditions. The plan has been organized to allow these updates to primarily occur within the appendices.

1.3 Regulated Area

Requirements of the 2016 MS4 Permit are limited to a regulated area, defined as the Town's Urbanized Area (UA) which generally constitute the largest and most dense areas of settlement in a region. The Bureau of the Census determines UAs by applying a detailed set of published UA criteria to the latest decennial census data. Although the full UA definition is complex, the Bureau of the Census' general definition of a UA, based on population and population density, is provided below:

> *"An urbanized area (UA) is a densely settled core of census tracts and/or census blocks that have population of at least 50,000, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. It is a calculation used by the Bureau of the Census to determine the geographic boundaries of the most heavily developed and dense urban areas."*

The most recent UA maps are based on the 2010 Census and **Figure 1-1** shows the UA in the Town of Lynnfield, which covers its entire area. This means Lynnfield's UA covers

100% of its population; about 11,600 people per the most recent census data. The UA area has not changed since the 2000 Census. Although the UA is subject to change every 10 years based on the application of the Census definition, areas identified as urbanized during any previous Census shall retain that definition, regardless of land-use changes. Thus, Lynnfield's UA will continue to cover its entire Town area indefinitely.

1.4 How to Use this Plan

For the purposes of the 2016 MS4 Permit and ease of use, the Town's SWMP encompasses four separate written documents:

1. SWMP Plan (this document);
2. Illicit Discharge Detection and Elimination (IDDE) Plan;
3. Operation and Maintenance (O&M) Plan; and
4. Stormwater Pollution Prevention Plan (SWPPP) for Lynnfield Department of Public Works (DPW) Maintenance Facility.

The IDDE Plan, O&M Plan, and SWPPP are prepared as separate standalone documents to this SWMP Plan. This SWMP Plan is divided into several sections and includes the following components:

Section 2 **Town Characteristics** – Section 2 provides an overview of relevant characteristics, focusing on those aspects related to stormwater runoff and the water quality of surface waters.

Section 3 **MCM 1: Public Education and Outreach** – regulated operators of MS4s are required to implement a public education program. Section 3 discusses activities to comply with this measure.

Section 4 **MCM 2: Public Participation and Involvement** – regulated MS4s are required to obtain public participation throughout the stormwater management program. Section 4 discusses activities to comply with this measure.

Section 5 **MCM 3: Illicit Discharge, Detection, and Elimination** – regulated MS4s must develop and implement an illicit discharge detection and elimination program and develop a regulation to prohibit illicit discharges to the storm drain system. Section 5 discusses activities to comply with this measure. A separate standalone IDDE Plan has also been prepared.

Section 6 **MCM 4: Construction Site Stormwater Runoff Control** – regulated MS4s are required to implement and enforce a program to reduce pollutants in stormwater runoff from construction activities that disturb one or more acres. This requires the development of a local regulation requiring implementation of proper erosion and sediment controls. Permittees are also responsible for inspections and enforcement. Section 6 discusses activities to comply with this measure.

Section 7 **MCM 5: Stormwater Management in New Development and Redevelopment** – regulated MS4s are required to develop and enforce a regulation requiring implementation of post-construction runoff controls at sites where construction activities disturb one or more acres. The controls must be designed to treat stormwater runoff from post-development sites and must be maintained over the long-term. Section 7 discusses activities to comply with this measure.

Section 8 **MCM 6: Good Housekeeping and Pollution Prevention** – regulated MS4s must review their infrastructure operations and those at specific facilities and make improvements where needed to minimize pollution to stormwater runoff. Operations and maintenance procedures must be documented in writing. Section 8 discusses activities to comply with this measure. A separate stand alone O&M Plan and stand alone SWPPP for the DPW Maintenance Facility have also been prepared.

Section 9 **TMDL and Impaired Waters Controls** – regulated MS4s are required to evaluate and address stormwater contributions to impaired waters. Section 9 discusses activities to comply with this measure.

Section 10 **Annual Reporting** – Section 10 provides a summary of annual reporting requirements in order to meet the 2016 MS4 Permit.

Section 11 **Implementation of Best Management Practices** – Section 11 provides a summary of proposed BMPs outlined in Sections 3 through 9 in a concise format for easy reference.

1.5 Program Responsibilities

This plan is intended to be used by Town of Lynnfield staff whose job involves administering the MS4 permit and associated requirements. The Town's MS4 program will be headed by the following personnel (**Table 1-1**):

Table 1-1. MS4 Responsible Personnel

Name	Title, Department	Contact
Mr. Patrick McAlpine	Town Engineer Department of Public Works	(781) 334-9503 pmcalpine@town.lynnfield.ma.us
Mr. Patrick McDonald	GIS Coordinator/Field Inspector	(781) 334-9513 pmcdonald@town.lynnfield.ma.us

The Town of Lynnfield has eight departments responsible for implementing portions of its MS4 program as identified in the NOI. **Table 1-2** provides a list of responsible departments and their general responsibilities within the MS4 program. The responsible person is the most senior person within each department listed below. The names of the responsible personnel are not provided so as to avoid the plan frequently becoming out of date due to changes in personnel and positions.

Table 1-2. Program Responsibilities

Department / Division	General Responsibilities
Board of Health	IDDE program creation and implementation
Conservation Commission	Bylaw and regulation development; site plan review procedures; site inspections and procedures; as-built submittal
Department of Public Works	Information distribution for public education; website management; public participation; system mapping; IDDE program creation and implementation; IDDE training; bylaw and regulation development; site plan review procedures; site inspections and procedures; develop operation and maintenance procedures; inventory buildings and facilities; SWPPP development and implementation; catch basin cleaning and street sweeping; road salt optimization program; BMP inspections and maintenance; TMDL and water quality limited requirements
Engineering	Public participation; as-built submittal; target properties to reduce impervious areas and for BMP retrofit
Information Technology	Information distribution for public education; website management; social media participation
Planning	Information distribution for public education; website management; social media participation; bylaw and regulation development; site plan review procedures; site inspections and procedures; as-built submittal
Town Administrator	Bylaw and regulation development; site plan review procedures; site inspections and procedures
Town Clerk	Information distribution for public education

2 Town Characteristics

This section provides some background information on the Town of Lynnfield, Massachusetts, useful in understanding the Town's characteristics and resources to develop a tailored Stormwater Management Plan. Town characteristics are described below.

2.1 Community Information

Lynnfield is located in northeastern Massachusetts within Essex County, approximately 12 miles north of Boston and just north of I-95. It is generally bordered by North Reading, Massachusetts to the north, Middleton to the northeast, Peabody to the east, Lynn to the southeast, Saugus to the south, Wakefield to the southwest, and Reading to the west. The Town area includes two separate watersheds; the Saugus River and the Ipswich River. Select relevant community profile information is provided below:

- Total Area = 10.5 square miles *(source: Wikipedia)*
- Regulated Area Population = 11,600 *(source: EPA maps based on 2010 US Census)*

2.2 Land Use

The types of land uses within the regulated area of the Town of Lynnfield as of 2018 are shown on **Figure 2-1** and provided below. Impervious area is shown on **Figure 2-2**.

- Commercial 1.4%
- Forest 33.3%
- Industrial 0.2%
- Open Land and Agriculture 6.8%
- Residential 32.6%
- Transportation and Utilities 3.0%
- Wetlands 18.9%
- Water 3.9%

As shown above, Lynnfield has substantial forest, open land, and water/wetland area (approximately 63%), with much of the remaining land uses consisting of residential development (approximately 33%). Remaining land use (approximately 5%) consists largely of roadways and commercial/industrial development.

2.3 303(d) Impaired Waterbodies

The ultimate goal of this Stormwater Management Plan is to outline a program to effectively maintain the Town's stormwater infrastructure and to improve the water quality of receiving waters (waters which receive stormwater discharges from the MS4) in compliance with the 2016 MS4 Permit. 303(d) impaired waters are those surface waters identified by the MassDEP as priority waters that do not meet water quality criteria. As part of the 2016 MS4 Permit, communities must implement BMPs to address waters with an approved Total Maximum Daily Load (TMDL) as of the issuance date of the permit (April 4, 2016) and to

address water quality limited waters, including but not limited to waters listed in categories 5 or 4a on the Massachusetts Integrated Report of waters listed pursuant to Clean Water Act section 303(d) and 305(b). **Table 2-1** lists the "impaired waters" for which Lynnfield must meet MS4 permit requirements based on the Final 2016 Massachusetts Integrated List of Waters produced by MassDEP every 2 years. These waterbodies are shown on **Figure 2-3**. A running list of changes from the 2014 303(d) list is included in **Appendix B**.

Table 2-1. Impaired Waters

Waterbody Name	Segment ID and Category[1]		Impairment(s)	Approved TMDL[2]
Hawkes Brook	MA93-32	4a	Fecal Coliform	50120
			Escherichia coli	50120
Saugus River	MA93-35	4a	(Alteration in stream-side or littoral vegetative covers*)	
			(Low flow alterations*)	
			Fecal Coliform	50120
			Escherichia coli	50120
Beaverdam Brook	MA93-30	5	Fecal Coliform	50120
			Dissolved Oxygen	
			Escherichia coli	50120
Hawkes Pond	MA93032	5	Turbidity	
Pillings Pond	MA93056	5	Chlorophyll-a	
			Dissolved Oxygen Saturation	
			Excess Algal Growth	
			Dissolved Oxygen	
			Phosphorus	
			Secchi disk transparency	
Saugus River	MA93-34	5	(Fish-Passage Barrier*)	
			(Physical substrate habitat alterations*)	
			Excess Algal Growth	
			E. Coli	50120
			Fecal Coliform	50120
			Nitrogen	
			Phosphorus	
			Turbidity	

Impairments added in the 2016 303(d) list are highlighted in blude in the table.
*TMDL not required (non-pollutant).

1. Category 4a Waters – impaired waters with a completed TMDL.
   Category 5 Waters – impaired waters that require a TMDL.
2. "Approved TMDLs" are those that have been approved by EPA as of the date of issuance of the 2016 Permit. EPA TMDL Number from the 303(d) list.

Requirements for TMDL or water quality limited waterbodies related to nitrogen, phosphorus, bacteria, and turbidity are outlined further in **Section 9**.

2.4 Measures to Protect Surface Drinking Water Supplies

Lynnfield receives drinking water from the Lynnfield Center Water District (LCWD), which obtains its drinking water from groundwater sources. Large portions of the Town are located within watersheds for water supply sources used by the surrounding communities, including the Saugus River watershed, the Hawkes Pond watershed, the Walden Pond watershed and the Winona Pond watershed. The Winona Pond watershed also includes the Suntaug Lake water supply. These are shown on **Figure 2-4**. Lynnfield has approximately 207 MS4 outfalls located within these watersheds, primarily in the Saugus River and Hawkes Pond watersheds, with a few in the Winona Pond watershed. Outfalls within the water supply watersheds are shown on **Figure 2-4**.

The Saugus River is impaired for nitrogen and phosphorus and Hawkes Pond is impaired for turbidity. The presence of these impairments is factored into prioritization efforts for SWMP activities such as illicit discharge investigations and identification of opportunities for best management practice (BMP) retrofits. The data collected during these efforts will also be used to evaluate opportunities and appropriateness of implementing pretreatment and/or spill response measures to protect surface water supplies and their tributaries.

2.5 Endangered Species Act Determination

In order to be eligible to discharge stormwater under the 2016 MS4 Permit, the Town of Lynnfield must certify that its stormwater system is not impacting federally listed rare or endangered species habitat or other critical environmental locations. This was completed in the summer of 2018 as meeting "Criterion B" on the Notice of Intent with the results documented in **Appendix A**. The Northern Long-eared Bat *(Myotis septentrionalis)*, Red Knot *(Calidris canutus rufa)*, and Roseate Tern (*Sterna dougallii)* were identified as potentially being present within Lynnfield's regulated area. No critical habitats were identified.

2.6 National Historic Preservation Act Determination

Regulated MS4s must also evaluate whether its discharges have the potential to affect historic properties. If there have been no relevant changes in existing discharges since the 2003 MS4 General Permit, the discharge can still be considered to have no potential to have an effect on historic properties. This has been documented as "Criterion A" on the Notice of Intent (**Appendix A**) and thus no additional information is required for documentation.

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. In these cases, such as during future construction of structural stormwater BMPs, the Town will ensure that historic properties will not be impacted by their activities, or that they are in compliance with a written agreement with the State

Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other tribal representative that outlines all measures the applicant will carry out to mitigate or prevent any adverse effects on historic properties. This will be completed as required.

3 MCM 1: Public Education and Outreach

3.1 Summary of Permit Requirements

3.1.1 Core Permit Requirements

Under MCM 1, permittees must develop an educational program, define educational goals, express specific messages, define the targeted audience for each message, and identify responsible parties for program implementation. At a minimum, the program must provide information concerning the impact of stormwater discharges on water bodies within the community, especially those waters that are impaired or identified as priority waters. The program must identify steps and/or activities that the public can take to reduce the pollutants in stormwater runoff and their impacts to the environment.

Permittees must address four core target audiences, unless one of these audiences is not present in the MS4 community. The targeted audiences and educational topics requiring consideration under the permit are outlined below:

1. Residents
   - Effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers) on water quality;
   - Benefits of appropriate on-site infiltration of stormwater;
   - Effects of automotive work and car washing on water quality;
   - Proper disposal of swimming pool water;
   - Proper management of pet waste; and
   - Maintenance of septic systems.

2. Businesses, Institutions, and Commercial Facilities
   - Proper lawn maintenance (use of pesticides, herbicides and fertilizer);
   - Benefits of appropriate on-site infiltration of stormwater;
   - Building maintenance and storage of materials;
   - Proper use and storage of salt or other de-icing and anti-icing materials;
   - Proper management of waste materials and dumpsters;
   - Proper management of parking lot surfaces;
   - Proper car care activities; and
   - Proper disposal of swimming pool water by entities such as motels, hotels, and health and country clubs.

3. Developers and Construction
   - Proper sediment and erosion control management practices;
   - Information about Low Impact Development (LID) principles and technologies; and
   - Information about EPA's construction general permit (CGP).

4. Industrial facilities
    - Equipment inspection and maintenance;
    - Proper storage of industrial materials (emphasizing pollution prevention);
    - Proper management of dumpsters;
    - Minimization of use of salt or other de-icing/anti-icing materials;
    - Proper storage of salt or other de-icing/anti-icing materials;
    - Benefits of appropriate on-site infiltration of stormwater runoff from areas with low exposure to industrial materials such as roofs or employee parking;
    - Proper maintenance of parking lot surfaces (sweeping); and
    - Requirements for coverage under EPA's MSGP.

At least two educational messages must be distributed to each audience over the permit term spaced at least a year apart. See sections below for more information.

3.1.2 TMDL & Impaired Waters Requirements

Public education and outreach programs must also address impaired waterbodies or those identified as priority waters. Impaired waterbodies are shown in **Table 2-1**. As noted in **Table 2-1**, Lynnfield has waterbodies listed as impaired for bacteria, nitrogen, and phosphorus. Therefore, relevant public information on these topics as outlined in the 2016 MS4 Permit, and summarized below, will be included within the education program.

Nitrogen and Phosphorus Impaired Waterbody Requirements (Residents & Businesses)

- Spring (March/April): encourage proper use and disposal of grass clippings and use of slow-release and phosphorus-free fertilizers;
- Summer (June/July): encourage proper management of pet waste, including noting any existing ordinances; and
- Fall (August/September/October): encourage the proper disposal of leaf litter.

Bacteria TMDL and Impaired Waterbody Requirements (Residents)

- Annual message encouraging the proper management of pet waste, including noting any existing bylaws where appropriate;
- Disseminate educational materials to dog owners at the time of issuance or renewal of a dog license;
- Describe detrimental impacts of improper pet waste management, requirements for waste collection and disposal, and penalties for non-compliance; and
- Provide information to owners of septic systems about proper maintenance.

Due to the extent of impaired waters present throughout the Town, each message will be distributed community-wide. For details, see the following sections.

3.2 Past Public Education Program

In response to requirements under the 2003 permit, Lynnfield has enacted a multifaceted approach to stormwater public education and outreach. The following summarizes the Town's past public education activities:

- **Stormwater Poster** – distribute educational information on nonpoint source pollution at public buildings.
- **Local Cable** – the Town has aired stormwater messages on the local cable access channel.
- **Stormwater Webpage** – the Town maintains a web presence with information and helpful links relating to stormwater management and volunteer events.
- **Brochures** – the Town has distributed nonpoint source brochures.
- **Press Releases** – the Town has published press releases on various stormwater topics in the local paper.

3.3 Ongoing Public Education Program

Tables 3-1 through **3-4** summarize Lynnfield's public education program, by targeted audience, to meet the requirements of the 2016 MS4 Permit. Measurable goals, responsible departments and a schedule for implementation of all BMPs under the SWMP are provided in **Section 11**. The public education program is also documented in each MS4 Annual Report.

3.4 Measuring Public Education Program Effectiveness

During completion of the Town's annual report as detailed further under Section 11, Lynnfield will review the effectiveness of each message and the Town's overall education program. Effectiveness is expected to vary by message, however will generally be measured based on the quantity of materials distributed and feedback from applicable town employees based on general observations in their area of work. Educational messages and/or distribution techniques for any of the target audiences will be modified as needed, should program managers determine that they are ineffective.

Table 3-1. Residential Public Outreach Program

BMP ID	BMP Materials/ Distribution	BMP Topic Description	Responsible Department
1-1	Brochures/ Pamphlets	Distribute fact sheets or brochures on pet waste pickup with dog licenses.	Town Clerk
		Print and post "Think Blue" flyers at Town Hall.	DPW
	Web Page	Provide information on website related to septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide & fertilizer use, grass clippings and leaf litter disposal, and car washing.	DPW Operations & Information Technology (IT)
	Social Media	Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT
	News Articles/Press Releases	Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW

Table 3-2. Businesses, Institutions, & Commercial Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-2	Web Page	Provide information on website related to pesticide and fertilizer use, grass clippings and leaf litter disposal, building maintenance, salt usage, storage of materials and wastes, car washing, and the benefits of infiltration.	DPW Operations & IT
	Social Media	Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT
	News Articles/Press Releases	Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW
	Brochures/Pamphlets	Print and post "Think Blue" flyers at Town Hall.	DPW

Table 3-3. Developers and Construction Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-3	Web Page	Provide information on website related to erosion and sediment control, LID and Construction General Permit (CGP).	Planning/Zoning Department & IT
	Brochures/Pamphlets	Distribute fact sheets or brochures on erosion and sediment control with permit applications.	Planning/Zoning Department & IT
	Social Media	Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT
	News Articles/Press Releases	Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW
	Brochures/Pamphlets	Print and post "Think Blue" flyers at Town Hall.	DPW

Table 3-4. Industrial Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-4	Social Media	Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT
	News Articles/Press Releases	Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW
	Brochures/Pamphlets	Print and post "Think Blue" flyers at Town Hall.	DPW

4 MCM 2: Public Participation and Involvement

4.1 Summary of Permit Requirements

Under MCM 2, permittees must provide annual opportunities for public participation in the review and implementation of the Town's SWMP as part of a public education and involvement program. All public involvement activities must comply with state public notice requirements. The SWMP and annual reports must be made available so that the public has opportunities to review and comment.

4.2 Past Public Participation and Involvement Opportunities

The following summarizes Lynnfield's past public participation activities that will be continued under the 2016 MS4 Permit:

- **Stormwater Advisory Committee** – the Town formed a Stormwater Advisory Committee to discuss implementation of its stormwater program.
- **Household Hazardous Waste Collection Days** – the Town sponsors an annual household hazardous waste collection day in the fall to encourage the proper disposal of hazardous materials and used oil by its residents.
- **Waste Oil Collection** – the Town collects waste oil annually.
- **Catch Basin Stenciling** – the Town has implemented a catch basin stenciling program.
- **Stream Clean-up** – the Town has held stream clean-up days approximately every other year.

4.3 Ongoing Public Participation and Involvement Opportunities

This written SWMP Plan and annual reports are available for review and comment via the Town's website, along with the name, email address and/or phone number of a contact person from the Town government to request additional information or submit comments. This allows the public to comment on the program at least once per year. An updated SWMP Plan will be posted to the website as additional tasks are completed.

Table 4-1 summarizes Lynnfield's proposed Public Participation and Involvement Opportunities BMPs to meet the requirements of the 2016 MS4 Permit. Measurable goals, responsible departments and a schedule for implementation of all BMPs under the SWMP are provided in **Section 11**.

Table 4-1. Public Participation and Involvement Program

BMP ID	BMP	BMP Description	Responsible Department
2-1	Make SWMP Plan and Annual Reports Available on Website	Annual review of stormwater management plan and posting on website. Allow public to comment on the plan at least annually. Track number of website hits.	Town Engineer
2-2	Sponsor Household Hazardous Waste Event	Continue to allow public to drop off household hazardous wastes at an annual event.	DPW

5 MCM 3: Illicit Discharge, Detection, and Elimination

5.1 Summary of Permit Requirements

Under MCM 3, permittees must implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. An "illicit discharge" is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities. A summary of the required IDDE activities and timelines are provided below.

- **Legal Authority** – the IDDE program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to prohibit, investigate, and eliminate illicit discharges. For permittees authorized by the MS4-2003 permit such as Lynnfield, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.

- **Sanitary Sewer Overflow** – 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. Regulated communities must identify all known locations where sanitary sewer overflows (SSOs) have discharged to the MS4 within the previous 5-years. Permittees must also develop an inventory within 1-year of the effective date and update it annually. Upon detection of an SSO, the permittee must eliminate it as quickly as possible and take interim mitigation measures to minimize or eliminate the discharge of pollutants until remediation work is complete.

- **System Mapping** – regulated communities must complete a comprehensive map of their stormwater system in 2 phases. Phase 1 must be completed within 2 years and include infrastructure such as outfalls and preliminary catchment delineations, waterbodies, open channel conveyances, interconnections with other MS4s, and structural stormwater BMPs. Phase 2 must be completed within 10 years and include information such as outfalls with high accuracy GPS location and refined catchment delineations, catch basins, manholes, pipe connectivity, and sanitary or combined sewer systems as available/applicable.

- **Written Illicit Discharge, Detection, and Elimination Plan** – the 2016 MS4 Permit requires preparation of a comprehensive written IDDE Program or IDDE Plan that provides detailed procedures for assessment and priority ranking of outfalls and interconnections, dry and wet weather outfall sampling, catchment investigation procedures, system vulnerability factor (SVF) assessment, identification of an illicit discharge, illicit discharge removal, and ongoing screening requirements. The

written IDDE Program must be prepared as a standalone IDDE Plan separate from this SWMP Plan.

- **Annual IDDE Training** – the 2016 MS4 Permit requires annual IDDE training to be provided to all employees involved in the IDDE program. Training will, at a minimum, include 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.

5.2 Past IDDE Program

The following summarizes Lynnfield's past IDDE activities:

- **Stormwater System Mapping** – the Town has mapped all known outfalls and the majority of other drainage infrastructure. Results have been incorporated into a town-wide GIS system.

- **Regulatory Authority** – the Town established a bylaw under Stormwater Management, Article I, "Non-Stormwater Discharge" that addresses the following items as required under the 2016 MS4 Permit:

    - 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.

    Legal authority meets all permit requirements and is documented in **Appendix C**.

- **IDDE Plan** – the Town developed an IDDE Plan under the 2003 MS4 Permit.

5.3 Ongoing IDDE Program

Lynnfield has conducted multiple activities to identify illicit discharges. A separate written IDDE plan is available and outlines legal authority, program responsibilities, ranks catchment areas, and outlines procedures for investigation and removal in accordance with the permit. This written plan will be updated and refined as needed to incorporate findings of field investigations.

The following sections outline Lynnfield's IDDE program to meet the requirements of the 2016 MS4 Permit.

Table 5-1 outlines Lynnfield's IDDE program to meet permit requirements. The measurable goals, responsible departments and schedule for implementation of all BMPs under the SWMP are provided in Section 11.

Table 5-1. IDDE Program

BMP ID	BMP	BMP Description	Responsible Department
3-1	SSO Inventory	The Town's population relies entirely on septic systems for wastewater management, therefore SSO considerations will not apply to the Town's program.	DPW Operations
3-2	Storm Sewer System Map	Mapping status and accompanying maps are provided in **Appendix D**, and are being continuously updated. The Town of Lynnfield will continue to update its stormwater mapping by the required deadlines to include the components required under the permit. All information will be incorporated into its GIS library.	DPW Operations
3-3	Written IDDE Program	A written IDDE program has been developed as a separate document from this SWMP.	DPW Operations, Board of Health
3-4	Implement IDDE Program	The IDDE program will be implemented following the program plan developed in the IDDE Plan. All illicit discharges will be documented and follow-up catchment investigations will be conducted.	DPW Operations, Board of Health
3-5	Employee Training	IDDE training for employees will be conducted before activities commence. Training will at a minimum include information on how to identify illicit discharges and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. Frequency and type(s) of training will be included in the annual report.	DPW Operations
3-6	Conduct Dry Weather Screening	Lynnfield will conduct dry weather screening in accordance with screening procedures outlined in the IDDE Plan.	DPW Operations
3-7	Wet Weather Screening	Lynnfield will conduct wet weather screening in accordance with screening procedures outlined in the IDDE Plan.	DPW Operations
3-8	Ongoing Screening	Lynnfield will conduct ongoing dry weather and wet weather screening (as necessary) as outlined in the IDDE Plan.	DPW Operations

5.4 Indicators of IDDE Program Progress

The success of the IDDE Program will be evaluated according to the following parameters:

- Storm system mapping 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 procedures;
- Updated SVF and catchment inventory and ranking;
- Dry weather and wet weather screening and sampling results;
- Estimated volume or quantity of sewage removed; and
- Number of employees successfully trained on IDDE.

The above will be tracked throughout the year and reported as part of each annual report submitted to EPA each year by September 29.

6 MCM 4: Construction Site Stormwater Runoff Control

6.1 Summary of Permit Requirements

Under MCM 4, permittees are required to implement and enforce a program to reduce pollutants in stormwater runoff discharged to the MS4 from all construction activities that result in a land disturbance of greater than or equal to one acre within the regulated area. This program shall also regulate disturbances less than one acre if they are part of a larger common plan of development or sale that would disturb one or more acres. A summary of the required Construction Site Stormwater Runoff Control Program activities and timelines are provided below:

- **Legal Authority** – the Construction Site Stormwater Runoff Control Program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to:
    - Require the use of sediment and erosion control practices at construction sites; and
    - Include controls for other wastes on construction sites.

  For permittees authorized by the 2003 MS4 permit such as Lynnfield, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.

- **Construction Site Stormwater Runoff Control Program** – the 2016 MS4 Permit requires preparation of written Construction Site Stormwater Runoff Control Program procedures that includes the following:
    - Pre-construction plan review of the site design, planned operations, planned BMPs during the construction phase, and planned BMPs to manage runoff after development;
    - Site inspections and enforcement actions to take place both during construction of BMPs and after construction of BMPs; and
    - Requirements for construction site to implement a sediment and erosion control program that includes BMPs appropriate for the conditions at the construction site.

6.2 Past Construction Site Stormwater Runoff Control Measures

The following summarizes Lynnfield's past activities:

- **Regulatory Authority** – the Town established a bylaw under Stormwater Management, Article I, "Non-Stormwater Discharge" that regulates construction sites that disturb one or more acres of land, or < 1 acre if part of a development that will disturb >1 acre.

- **Stormwater Management Permits –** the "Stormwater Rules and Regulations" require any developer proposing to disturb an acre of land or more to prepare a Stormwater Management Permit application and Stormwater Management Plans to reduce adverse impacts from stormwater resulting from construction.

- **Erosion and Sediment Control Plans –** the Stormwater Management Permit required for all land disturbances greater than one acre requires developers to prepare an Erosion and Sediment Control Plan for the construction process.

- **Construction Site Plan Review** – construction plans containing all of the above components are reviewed by at least one Town department.

- **Monthly Inspection Reports –** the Stormwater Management Permit required for all land disturbances greater than one acre requires developers to submit monthly erosion and sediment control inspection reports to the Town throughout the construction process.

6.3 Ongoing Construction Site Stormwater Runoff Control Program

Table 6-1 outlines Lynnfield's plans to meet the requirements of the 2016 MS4 Permit to establish a Construction Site Stormwater Runoff Control program. Measurable goals, responsible department and schedule for implementation of all BMPs under the SWMP are provided in Section 11.

Table 6-1. Construction Site Stormwater Runoff Control Program

BMP ID	BMP	BMP Description	Responsible Department
4-1	Site Inspection & Enforcement of Erosion and Sediment Control Measures	Lynnfield's existing Stormwater Bylaw and Regulations (as of June 30, 2019) werereviewed for completeness and compliance with the permit (**Appendix C**). The existing bylaw/regulations require inspections certifying that the site is in compliance with the land disturbance permit weekly and at specific events. The peer reviewer or applicant's technical representative is responsible for routine inspections. The authority for site inspection and enforcement is clearly designated to the Conservation Commission. Written procedures for site inspections have been prepared and are also included in **Appendix C**.	Town Adminstrator, DPW, Conservation Commission, Planning
4-2	Site Plan Review	The bylaw/regulations outline the requirements for application submittal and procedures for site plan review, including a pre-construction review of the site design with a public hearing and notification of abutters. This process also includes a review of planned construction site operations and BMPs to be used during and after construction to address potential water quality impacts. Lynnfield will track the number of site reviews for annual reporting purposes.	Town Administrator, DPW, Conservation Commission, Planning
4-3	Erosion and Sediment Control	The Town's bylaw/regulations require development of an Erosion and Sediment Control Plan by either a Professional Engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC) that includes best management practices for controlling surface runoff, erosion and sedimentation during pre-construction and construction related land disturbance activities.	Town Administrator, DPW, Conservation Commission, Planning
4-4	Waste Control	The bylaw/regulations require an Erosion and Sediment Control Plan that must be designed to properly manage on-site construction and waste materials, including concrete truck washout, chemicals, litter and sanitary waste. Inspections are conducted to certify that operators are adhering to the approved Erosion and Sediment Control Plan. Updated bylaws/regulations are included in **Appendix C**.	Town Administrator, DPW, Conservation Commission, Planning

7 MCM 5: Stormwater Management in New Development and Redevelopment

7.1 Summary of Permit Requirements

Under MCM 5, permittees shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment sites that disturb one or more acres and discharge into an MS4 system. This program shall also regulate disturbances less than one acre if they are part of a larger common plan of development or sale that would disturb one or more acres. A summary of the required Stormwater Management in New Development and Redevelopment, also known as Post Construction Stormwater Management, activities and timelines are provided below:

- **Legal Authority –** the Post Construction Stormwater Management Program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to:
    - Require LID site planning and design strategies to the maximum extent feasible;
    - Meet many of the requirements of the Massachusetts Stormwater Handbook and associated stormwater standards;
    - Incorporate runoff volume storage and/or pollutant removal requirements, specifically:
        1. Stormwater management systems on new development sites shall be designed to:
            a) Not allow untreated stormwater discharges (Standard 1), control peak runoff rates (Standard 2), recharge groundwater (Standard 3), eliminate or reduce discharge of pollutants from land uses with higher pollutant loads (Standard 5), protect Zone II or Interim Wellhead Protection Areas (Standard 6), and implement long term maintenance practices (Standard 9); and
            b) Require that all stormwater management systems be designed to:
                - Retain the volume of runoff equal to at least 1.0 inches over the total post-construction impervious surface area on the site and/or
                - Remove 90% of the average annual Total Suspended Solids (TSS) load and 60% of the average annual Total Phosphorus (TP) load from the total post-construction impervious surface area on the site.
        2. Redevelopment Requirements:
            a) Stormwater management systems on Redevelopment sites shall meet the following to the maximum extent feasible:

1) Standards 1, 2, and 3, and pretreatment and structural BMP requirements of Standards 5 and 6.

b) Stormwater management systems on Redevelopment sites shall also improve existing conditions by requiring stormwater BMPs be designed to:
   - Retain the volume of runoff equal to at least 0.80 inches over the total post-construction impervious surface area on the site and/or
   - Remove 80% of the average annual TSS load and 50% of the TP load from the total post-construction impervious area on the site.

c) Redevelopment activities that are limited to maintenance and improvement of existing roads, (including widening less than a single lane, adding shoulders, improving existing drainage systems, and repaving projects) shall improve existing conditions where feasible and are exempt from other parts above.

- Meet additional requirements for TMDL and water quality limited waterbodies.

Updates must be made within three years of the effective permit date.

In addition, the bylaw must include updates to address the requirements of the Charles River phosphorus TMDL. See Section 9 for more information.

- **As-Built Submittals –** the permittee must require the submission of as-built drawings within two years after completion of construction projects and include structural and non-structural controls.

- **Operation and Maintenance –** the program must include procedures to ensure adequate long-term operation and maintenance of BMPs are established after completion of a construction project, along with a dedicated funding source within two years of the effective permit date.

- **Regulatory Assessment –** the permittee must complete an assessment of existing regulations that could affect creation of impervious cover to determine if changes are required to support LID. Additionally, the permittee must assess current regulations to ensure that certain green infrastructure is allowable where feasible. Any required changes must be completed within 4 years of the effective permit date.

- **Identification of Potential Retrofit Sites –** the permittee must identify municipal properties and infrastructure within five years of the effective permit date to determine at least five properties that could be modified or retrofitted with stormwater BMP improvements. The permittee must report on all properties that have been modified or retrofitted with BMPs to mitigate impervious area and maintain an ongoing list of five sites until such time as less than five sites remain.

7.2 Past Post Construction Stormwater Management

The following summarizes Lynnfield's past activities:

- **Regulatory Authority** – the Town established a bylaw under Stormwater Management, Article I, "Non-Stormwater Discharge" that regulates construction sites that disturb one or more acres of land, or < 1 acre if part of a development that will disturb >1 acre.

- **Stormwater Management Plans** – the Stormwater Rules and Regulations requires any developer proposing to disturb an acre of land or more to prepare a Stormwater Management Plan that incorporates many of the Massachusetts Stormwater Standards, including specifics for new and redevelopment.

- **As-Built Plans** – the Stormwater Management Permit required for all land disturbances greater than one acre requires developers to submit as-built record drawings of all structural stormwater controls and BMPs to the Conservation Commission.

- **Operation and Maintenance Plans** – the Stormwater Management Permit required for all land disturbances greater than one acre requires developers to prepare Operation and Maintenance Plans for any proposed stormwater structures.

7.3 Ongoing Post-Construction Stormwater Management Program

Table 7-1 outlines Lynnfield's Post-Construction Stormwater Management Program to meet the requirements of the 2016 MS4 Permit. Measurable goals, responsible department and schedule for implementation of all BMPs under the SWMP are provided in Section 11.

Table 7-1. Stormwater Management in New and Redevelopment Program

BMP ID	BMP	BMP Description	Responsible Department
5-1	As-built Plans for On-site Stormwater Control	Lynnfield requires final submittal of certified as-built plans to the Conservation Commission that show all structural stormwater controls and treatment BMPs. Lynnfield also requires submittal of an O&M Plan, however, does not specifically establish procedures to ensure that long-term O&M is performed (as of June 30, 2019). Lynnfield will review its existing regulations to determine if further changes are required, and develop procedures to ensure that the adequate long-term O&M of BMPs is accounted for. This has been completed with regulatory updates documented in **Appendix C**.	Engineering, Conservation Commission, Planning
5-2	Target Properties to Reduce Impervious Areas	Lynnfield will complete an inventory of municipal properties (**Appendix E**) that could be retrofitted with stormwater BMPs, along with a review of existing site conditions. Retrofit opportunities must also consider the potential to reduce nitrogen discharges for properties within the Saugus River watershed and for phosphorus within the Saugus River and Pillings Pond watersheds. As BMPs are constructed, the inventory will be updated so that it always contains at least five sites in the inventory for potential improvement.	Engineering
5-3	Allow Green Infrastructure	Lynnfield will develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist. The report will be included in **Appendix C**.	Planning Board, Conservation Commission
5-4	Street Design and Parking Lot Guidelines	Lynnfield will 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 LID options. The report will be included in **Appendix C**.	Planning Board, Conservation Commission
5-5	Ensure Stormwater Controls or Management Practices for New and Re-development Meet Permit Retention or Treatment Requirements and the MA Stormwater Handbook	Lynnfield is reviewing its existing regulations to determine changes that must be made to suit the Town. This has been completed with updates documented in **Appendix C**.	Town Administrator

8 MCM 6: Good Housekeeping and Pollution Prevention

8.1 Summary of Permit Requirements

Under MCM 6, permittees shall develop and implement an operations and maintenance program to reduce stormwater pollution from permittee activities. This includes optimizing existing activities related to parks and open space, buildings and facilities, vehicles and equipment, and stormwater infrastructure maintenance. A summary of the required Good Housekeeping and Pollution Prevention for Permittee Owned Operations activities and timelines is provided below.

8.1.1 Facility Operations and Maintenance Plans

The permittee must complete an inventory of all parks and open space, buildings and facilities where pollutants are exposed to stormwater runoff, and vehicles and equipment within two years of the permit effective date. The inventory must be reviewed annually and updated as necessary. Upon completion, the permittee must establish written procedures as part of a Facilities Operation and Maintenance Plan within two years of the permit effective date for the following items:

Parks and Open Space

- Proper use, storage, and disposal of pesticides, herbicides, and fertilizers;
- Lawn maintenance and landscaping activities to protect water quality, such as reducing mowing, lawn clippings handling, and use of alternative landscaping materials;
- Pet waste handling collection and disposal locations at all locations where pets are permitted, including signage;
- Control of waterfowl in areas where they congregate to reduce waterfowl droppings from entering the MS4s;
- Management of trash containers; and
- Addressing erosion or poor vegetative cover, particularly near a surface waterbody.

Buildings and Facilities

- Use, storage, and disposal of petroleum products and other potential pollutants.
- Materials handling training to applicable employees;
- Ensuring that Spill Prevention, Control, and Countermeasures (SPCC) Plans are in place if needed (aboveground petroleum storage greater than 1,320 gallons or underground petroleum storage greater than 42,000 gallons);
- Dumpsters and other waste management equipment; and
- Sweeping parking lots and keep facility areas clean to reduce pollutants in runoff.

Vehicles and Equipment

- Storage of vehicles to prevent fluid leaks to stormwater;
- Fueling area evaluation, including feasibility of fueling under cover; and
- Preventing vehicle wash waters from entering surface waters or the MS4.

In addition, the Town must establish requirements for use of slow release fertilizers on Town-owned properties currently using fertilizer and establish procedures to manage grass cuttings and leaf litter on Town property for areas of town within the nitrogen-impaired Saugus River watershed. Similar requirements must be implemented for control of phosphorous for areas within the Saugus River and Pillings Pond watersheds, specifically related to using phosphorus-free fertilizers.

8.1.2 Infrastructure Operation and Maintenance Plans

The permittee must establish written procedures as part of an Infrastructure Operation and Maintenance Plan within one years of the permit effective date to ensure that MS4 infrastructure is maintained in a timely manner to reduce the discharge of pollutants from the MS4 for the following items:

Catch Basin Cleaning

- Prioritization of catch basins located near construction activities for more frequent inspection and maintenance;
- Establishing a schedule with a goal that at the time of maintenance, no catch basin is more than 50% full;
- For catch basins that are more than 50% full during two consecutive inspections or cleaning events, methods for investigating the contributing drainage area for sources of excessive sediment loads; and
- Establishing a plan for optimizing catch basin cleaning, inspections, and documentation.

Street Sweeping

- Sweeping all streets and permittee-owned parking lots, with the exception of rural uncurbed roads with no catch basins or high-speed limited access highways at least one per year in the spring following winter sanding events;
- More frequent sweeping of targeted areas based on inspections, land use, or known water quality impacts;
- Increasing street sweeping frequency of all municipal owned streets and parking lots 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 (following leaf fall) for areas that discharge to water quality limited waterbodies and their tributaries where phosphorus is the cause of the impairment; and

- Increasing street sweeping to a schedule determined by the permittee to target areas with potential for high pollutant loads for areas that discharge to water quality limited waterbodies and their tributaries where solids, oil and grease, or metals is the cause of impairment.

Catch Basin and Street Sweeping Residuals Management

- Ensure proper storage of catch basins cleanings and street sweepings prior to disposal or reuse such that they do not discharge to receiving waters.

Winter Operation and Maintenance

- 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 of opportunities to use alternative materials; and
- Ensure that snow disposal activities do not result in disposal of snow into waters of the United States.

8.1.3 Stormwater Pollution Prevention Plans

The permittee must establish written Stormwater Pollution Prevention Plans for the following permittee-owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater as determined by the permittee. SWPPPs must address a number of components, including the following:

- Pollution Prevention Team;
- Facility description, identification of potential pollutant sources, and identification of stormwater controls;
- Stormwater management practices, including measures to minimize or prevent exposure, good housekeeping and preventative maintenance, spill prevention and response, erosion and sediment control, management of runoff, salt storage, employee training, and control measure maintenance; and
- Procedures for site inspections and sampling.

8.1.4 Stormwater BMP Inspections

The permittee must establish and implement written inspection and maintenance procedures and frequencies for all structural stormwater treatment structures, such as infiltration and detention basins, proprietary stormwater treatment structures, gravel wetlands, etc. All permittee-owned stormwater treatment structures (excluding catch basins) shall be inspected at least annually.

8.2 Past Good Housekeeping and Pollution Prevention Program

The following summarizes Lynnfield's past activities:

- **Street and Parking Lot Sweeping** – Lynnfield sweeps all streets and Town-owned parking lots annually.
- **Catch Basin Cleaning** – the Town uses a vendor to clean all catch basins once each year using a clamshell bucket.
- **Train Municipal Employees** – the Town has performed Spill Prevention Control and Countermeasures (SPCC) training to employees.

8.3 Ongoing Good Housekeeping and Pollution Prevention Program

Table 8-1 outlines Lynnfield's plans to meet the requirements of the 2016 MS4 Permit to establish a Good Housekeeping and Pollution Prevention Program. Measurable goals, responsible department and schedule for implementation of all BMPs under the SWMP are provided in Section 11.

Table 8-1. Good Housekeeping and Pollution Prevention Program

BMP ID	BMP	BMP Description	Responsible Department
6-1	O&M Procedures	Lynnfield will create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment. These have been incorporated into a separate O&M Plan.	DPW Operations
6-2	Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Lynnfield will create an inventory of all Town facilities for incorporation into the O&M Plan.	DPW Operations
6-3	Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure. Infrastructure O&M SOPs will be included in the Town's O&M Plan as they are developed.	DPW Operations
6-4	Stormwater Pollution Prevention Plans (SWPPPs)	Lynnfield will perform a preliminary analysis of its maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater to determine which facilities, if any, are located within areas that drain to the MS4. A SWPPP is required and has been prepared for the DPW Maintenance Facility.	DPW Operations
6-5	Catch Basin Cleaning	Lynnfield currently cleans and inspects all catch basins on an annual basis. The Town has developed a plan for prioritizing catch basin cleaning with a goal that no catch basins are more than 50% full of sediment at any time, which is provided in **Appendix F**. Catch basin cleaning SOPs are also included in the prioritization plan and have been included in the Town's O&M Plan.	DPW Operations
6-6	Street Sweeping Program	Lynnfield sweeps all streets and permittee-owned lots at least once a year. The program has been modified to sweep priority streets twice a year as shown on the Figure in **Appendix G**. A street sweeping SOP is found in the Town's separate O&M Plan.	DPW Operations
6-7	Road Salt Use Optimization Program	Lynnfield developed a SOP for winter road maintenance that optimizes the use of salt. This is included in the Town's separate O&M Plan.	DPW Operations
6-8	Inspection and Maintenance of Stormwater Treatment Structures	An inventory of known structural stormwater BMPs within the Town's regulated area is included in **Appendix H**, along with the results of any inspections. SOPs for performing inspections and maintenance are included in the separate O&M Plan.	DPW Operations

9 TMDL and Impaired Waters Controls

9.1 Permit Requirements

The 2016 MS4 Permit requires regulated operators of MS4s to determine whether stormwater discharges from their MS4 contribute to any impaired waterbodies, including those subject to an approved TMDL and certain water quality limited waterbodies. Water quality limited waters are any waterbodies that do not meet applicable water quality standards, including waterbodies listed in categories "4a" and "5" on the Massachusetts Integrated List of Waters, also known as the "303(d) List". MassDEP is responsible for preparing TMDLs for many of these listed waters to identify the problem pollutant and establish water quality goals. As shown in **Table 2-1,** the Town of Lynnfield has multiple waterbodies on the Massachusetts Integrated List, however, not all of these impairments are associated with pollutants and not all must be addressed under the 2016 MS4 Permit. Under the 2016 MS4 Permit, the Town of Lynnfield must address certain TMDL and water quality limited waterbody requirements for bacteria, nitrogen, phosphorus and turbidity as shown in **Table 9-1** and **9-2**.

Table 9-1. TMDL Waters Requirements

Waterbody Name	Impairment	2016 Permit Requirements
Hawkes Brook (MA93-32) Saugus River (MA93-34 & 35) Beaverdam Brook (MA93-30)	Bacteria (fecal coliform and E. Coli)	Appendix F, Part A.III

Table 9-2. Impaired Waters Requirements

Waterbody Name	Impairment	2016 Permit Requirements
Saugus River (MA93-34)	Nitrogen	Appendix H, Part I
Pillings Pond (MA93056) Saugus River (MA93-34)	Phosphorus	Appendix H, Part II
Hawkes Pond (MA93032) Saugus River (MA93-34)	Turbidity	Appendix H, Part V

9.2 Discharges to Approved TMDL Waterbodies

Approved TMDLs are those that have been approved by EPA as of the date of issuance of the permit, or April 4, 2016. As shown in **Table 9-1**, the Town of Lynnfield currently has three waterbodies with an approved TMDL for bacteria. Thus, the Town is required to implement the following requirements as outlined in Appendix F of the 2016 MS4 Permit.

9.2.1 Bacteria TMDL Requirements

The Town is required to implement the following requirements as outlined under Appendix F, Part III of the 2016 Permit. The Town of Lynnfield will include the following additional or enhanced BMPs, within its MCMs:

- **Public Education** – supplement its Residential program with an annual message encouraging the proper management of pet waste and disseminate educational materials to dog owners at the time of issuance or renewal of a dog license. Education materials shall describe the detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance. The Town also must provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens.

- **Illicit Discharge, Detection, and Elimination** – designate catchments draining to pathogen impaired segments as "Problem Catchments" or "High" priority.

Public education requirements have been incorporated into future public education outreach components as described in Section 3. IDDE requirements have been incorporated into Lynnfield's IDDE Plan.

9.3 Discharges to Water Quality Limited Waterbodies

Water quality limited waterbodies are those that have been listed on the most recent approved Massachusetts Integrated List of Waters. For Lynnfield, existing water quality limited waterbodies listed in **Table 9-2** must adhere to the requirements in Appendix H of the 2016 MS4 Permit. The following sections describe those additional requirements. The Town will review the most recent approved list of impaired waters as it is released and outline any additional requirements associated with the most recent list in **Appendix B**.

9.3.1 Nitrogen Water Quality Limited Waterbody Requirements

The Town of Lynnfield is subject to the nitrogen water quality limited waterbody requirements for discharges to the Saugus River and thus is required to implement the following requirements as outlined under Appendix H, Part I of the 2016 Permit.
The Town of Lynnfield will include the following additional or enhanced BMPs, in addition to the six MCMs outlined previously:

- **Public Education** – supplement its Residential and Business/Commercial/Institution programs with additional annual messages as follows:
    - Spring (April-May): Proper use and disposal of grass clippings and use of slow-release fertilizers;
    - Summer (June-July): Proper management of pet waste; and
    - Fall (August-October): Proper disposal of leaf litter.

- **Stormwater Management in New Development and Redevelopment** – supplement standard permit bylaw requirements to also mandate the use of stormwater BMPs optimized for nitrogen removal as part of new development and redevelopment projects. Additionally, retrofit opportunities must consider

opportunities for constructing infiltration BMPs for properties within the Saugus River watershed.

- **Good Housekeeping and Pollution Prevention** – establish requirements for reducing fertilizer usage and/or using slow release fertilizers on Town-owned properties, procedures for properly managing grass cuttings and leaf litter on Town-owned property, and prohibit blowing organic waste onto impervious surfaces. Additionally, street sweeping must be increased to at least twice per year, once in the spring and once in the fall.

The Town of Lynnfield will also prepare a Nitrogen Source Identification Report that generally does the following and must be completed by the end of Year 4:

- Identifies, delineates, and prioritizes areas of town at the catchment-level that have the highest nitrogen loading potential based on land use and other factors;
- Accounts for the urbanized area that discharges to the Saugus River watershed;
- Determines impervious area based on catchment delineations;
- Accounts for any screening results performed under MCM 3 when developing conclusions; and
- Identifies potential retrofit opportunities for installing structural BMPs during redevelopment.

Upon completion of the Nitrogen Source Identification Report, the Town will evaluate all properties identified under the report or using the procedures identified under Section 7.3.5 to complete a site-specific evaluation addressing the following:

- Identifies the next planned redevelopment activity or planned retrofit date;
- Determines an estimated cost of redevelopment or retrofit BMPs; and
- Determines the engineering and regulatory feasibility BMP installation.

Upon completion, the Town will provide a list of planned structural BMPs, along with a plan and schedule for implementation by the end of Year 5. At least one BMP must be designed and constructed as a demonstration project by the end of Year 6 that targets a catchment with a high nitrogen load potential. Remaining structural BMPs must be constructed according to the provided plan and schedule. Nitrogen removals must be tracked and reported annually.

9.3.2 Phosphorus Water Quality Limited Waterbody Requirements

The Town of Lynnfield is also subject to the phosphorus water quality limited waterbody requirements for discharges to Saugus River and Pillings Pond and thus is required to implement the following requirements as outlined under Appendix H, Part II of the 2016 Permit. The Town of Lynnfield will include the following additional or enhanced BMPs, in addition to the six MCMs outlined previously:

- **Public Education** – supplement its Residential and Business/Commercial/Institution programs with additional annual messages as follows:
    - Spring (April-May): Proper use and disposal of grass clippings and use of slow-release and phosphorus-free fertilizers;
    - Summer (June-July): Proper management of pet waste; and
    - Fall (August-October): Proper disposal of leaf litter.

- **Stormwater Management in New Development and Redevelopment** – supplement standard permit bylaw requirements to also mandate the use of stormwater BMPs optimized for phosphorus removal as part of new development and redevelopment projects. Additionally, retrofit opportunities must consider opportunities for constructing infiltration BMPs for properties within the Saugus River and Pillings Pond watersheds.

- **Good Housekeeping and Pollution Prevention** – establish requirements for reducing fertilizer usage and/or using slow release fertilizers on Town-owned properties, procedures for properly managing grass cuttings and leaf litter on Town-owned property, and prohibit blowing organic waste onto impervious surfaces. Additionally, street sweeping must be increased to at least twice per year, once in the spring and once in the fall.

The Town of Lynnfield will also prepare a Phosphorus Source Identification Report that generally does the following and must be completed by the end of Year 4:

- Identifies, delineates, and prioritizes areas of town at the catchment-level that have the highest phosphorus loading potential based on land use and other factors;
- Accounts for the urbanized area that discharges to the Saugus River and Pillings Pond watersheds;
- Determines impervious area based on catchment delineations;
- Accounts for any screening results performed under MCM 3 when developing conclusions; and
- Identify potential retrofit opportunities for installing structural BMPs during redevelopment.

Upon completion of the Phosphorus Source Identification Report, the Town will evaluate all properties identified under the report or using the procedures identified under Section 7.3.5 to complete a site-specific evaluation addressing the following:

- Identifies the next planned redevelopment activity or planned retrofit date;
- Determines an estimated cost of redevelopment or retrofit BMPs; and
- Determines the engineering and regulatory feasibility BMP installation.

Upon completion, the Town will provide a list of planned structural BMPs, along with a plan and schedule for implementation by the end of Year 5. At least one BMP must be designed and constructed as a demonstration project by the end of Year 6 that targets a catchment with a high phosphorus load potential. Remaining structural BMPs must be

constructed according to the provided plan and schedule. Phosphorus removals must be tracked and reported annually.

9.3.3 Turbidity Water Quality Limited Waterbodies Requirements

The Town of Lynnfield has 2 water quality limited waterbodies, Hawkes Pond and the Saugus River, listed as impaired for turbidity. Thus, the Town must implement the following requirements as outlined under Appendix H, Part V of the 2016 Permit. The Town of Lynnfield must include the following additional or enhanced BMPs, in addition to the 6 MCMs outlined previously:

- **Stormwater Management in New Development and Redevelopment** – Stormwater management systems designed on commercial and industrial land use area draining to the water quality limited waterbody shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event. Any stormwater management system designed to infiltrate stormwater on commercial or industrial sites must provide the level of pollutant removal equal to or greater than the level of pollutant removal provided through the use of biofiltration of the same volume of runoff to be infiltrated, prior to infiltration.

- **Good Housekeeping and Pollution Prevention** – increase street sweeping frequency of all municipal streets and parking lots to target areas with potential for high pollutant loads. This may include increased sweeping in commercial and high-density residential areas, or largely impervious drainage areas. Prioritize inspection and maintenance for catch basins to ensure that no sump is more than 50 percent full. Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings. Include street sweeping schedule developed to target high pollutant loads in each annual report.

Stormwater management requirements for new and redevelopment will be addressed as part of the regulatory and other program updates to be completed during Year 2. The Town of Lynnfield has addressed street sweeping requirements under Section 8.3. The catch basin cleaning program is ongoing as outlined under Section 8.3.

10 Annual Reporting

The Town of Lynnfield will submit annual reports each year of the permit term. The reporting period will be a one-year period commencing on the permit effective date, and subsequent anniversaries thereof, except that the first annual report under this permit shall also cover the period from May 1, 2018 to the permit effective date. The annual report is due 90 days from the close of each reporting period, or by September 29 of each year. The annual reports must contain the following relevant information which should be tracked throughout the year, and should be filed within **Appendix I**:

- A self-assessment review of compliance with the permit terms and conditions.
- An assessment of the appropriateness of the selected BMPs.
- The status of any plans or activities, including:
    - Identification of all discharges determined to be causing or contributing to an exceedance of water quality standards and description of response;
    - For discharges subject to TMDL or water quality limited waterbody requirements, identification of BMPs used to address the impairment and assessment of the BMPs effectiveness;
    - For discharges to water quality limited waters a description of each BMP and any deliverables required.
- An assessment of the progress towards achieving the measurable goals and objectives of each of the 6 MCMs:
    - Evaluation of the public education program including a description of the targeted messages for each audience; method and dates of distribution; methods used to evaluate the program; and any changes to the program.
    - Description of the activities used to promote public participation including documentation of compliance with state public notice regulations.
    - Description of IDDE activities including: status of mapping and results of the ranking and assessment; identification of problem catchments; status of all IDDE Plan components; number and identifier of catchments evaluated; number and identifier of outfalls screened; number of illicit discharges located and removed; gallons of flow removed; identification of tracking indicators and measures of progress; and employee training.
    - Evaluation of construction runoff management including number of project plans reviewed; number of inspections; and number of enforcement actions.
    - Evaluation of stormwater management for new and redevelopment including status of ordinance development; review and status of the street design and barriers to green infrastructure assessment; and inventory status.
    - Status of the O&M Programs.
    - Status of SWPPPs, including inspection results.
- All outfall screening and monitoring data during the reporting period and cumulative for the permit term; and a description of any additional monitoring data received by the Town during the reporting period.
- Description of activities for the next reporting cycle.
- Description of any changes in identified BMPs or measurable goals.
- Description of activities undertaken by any entity contracted for achieving any measurable goal or implementing any control measure.

11 Implementation of Best Management Practices

The Town of Lynnfield's Best Management Practices Plan as outlined in the Town's NOI (**Appendix A**) is summarized in **Table 11-1**.

For consistency with the 6 MCMs and impaired water requirements, the BMPs are broken down into seven categories:

1. Public Education and Outreach;
2. Public Participation and Involvement;
3. Illicit Discharge Detection and Elimination;
4. Construction Site Stormwater Runoff Control;
5. Stormwater Management in New Development and Redevelopment;
6. Good Housekeeping and Pollution Prevention; and
7. TMDL and Water Quality Limited Waterbodies Controls

The BMP tables also outline the measurable goals for each BMP to gauge permit compliance, the responsible party(ies) for implementing each BMP, and an implementation schedule to be used throughout the permit period. In addition to the implementation activities outlined in this plan, the Town will also perform the following activities throughout the duration of the permit:

1. **Program Evaluation** – conduct annual evaluations of the Stormwater Management Program for compliance with permit conditions. The evaluation must include a determination of the appropriateness of the selected BMPs in efforts towards achieving the measurable goals outlined in **Table 11-1**.

2. **Record Keeping** – maintain records that pertain to the Stormwater Management Program for a period of at least 5 years. Records need to be made available to the public and the Town may charge a reasonable fee for copying. Records need not be submitted to EPA or MassDEP unless specifically requested.

3. **Reporting** – submit an annual report to EPA and MassDEP, including the information as noted in Section 10.

Refer to EPA's website for a copy of the 2016 MA MS4 Permit.

Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
1. Public Education and Outreach											
1-1	Residential Education Program	Brochures/Pamphlets with Dog Licenses - Distribute information on pet waste pickup with dog licenses.	Town Clerk	Provide information with all applications and renewals		*	*	*	*	*	
		Brochures/Pamphlets - Print and post "Think Blue" flyers at Town Hall.	DPW	Continue to update and distribute flyers at Town Hall		*	*	*	*	*	
		Web Page - Provide information on website related to septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide & fertilizer use, grass clippings and leaf litter disposal, and car washing.	DPW operations & IT	Addition to website with periodic updates		*	*	*	*	*	
		Social Media through Website - Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	
		Newspaper Articles/Press Releases of Conservation Commission Meetings and By-law Amendments - Continue to provide local coverage of all Conservation Commission meetings and proposed by-law amendments.	DPW	Issue periodic press releases in Town newspaper		*	*	*	*	*	
1-2	Businesses, Institutions, and Commercial Education Program	Webpage - Provide information on pesticide and fertilizer use, grass clippings and leaf litter disposal, building maintenance, salt usage, storage of materials and wastes, car washing, and the benefits of infiltration.	DPW Operations & IT	Addition to website with periodic updates		*	*	*	*	*	
		Social Media through Website - Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	
		Newspaper Articles/Press - Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW	Issue periodic press releases in Town newspaper		*	*	*	*	*	
		Brochures/Pamphlets - Print and post "Think Blue" flyers at Town Hall.	DPW	Continue to update and distribute flyers at Town Hall		*	*	*	*	*	
1-3	Developer and Construction Education Program	Webpage - Provide information on proper erosion and sediment control management practices, Low Impact Development (LID) principles and technologies, and EPA's construction general permit (CGP).	Planning/Zoning Department & IT	Addition to website with periodic updates		*	*	*	*	*	
		Brochures/Pamphlets - Distribute fact sheets or brochures on erosion and sediment control with permit applications.	Planning/Zoning Department & IT	Provide information with all applications		*	*	*	*	*	
		Social Media through Website - Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	
		Newspaper Articles/Press - Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW	Issue periodic press releases in Town newspaper		*	*	*	*	*	
		Brochures/Pamphlets - Print and post "Think Blue" flyers at Town Hall.	DPW	Continue to update and distribute flyers at Town Hall		*	*	*	*	*	
1-4	Industrial Education Program	Social Media through Website - Follow statewide "Think Blue" campaign on social media platforms.	Planning/Zoning Department & IT	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	
		Newspaper Articles/Press - Issue periodic press releases in Town newspaper using "Think Blue" topics and templates.	DPW	Issue periodic press releases in Town newspaper		*	*	*	*	*	
		Brochures/Pamphlets - Print and post "Think Blue" flyers at Town Hall.	DPW	Continue to update and distribute flyers at Town Hall		*	*	*	*	*	

Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
2. Public Participation and Involvement											
2-1	**Make SWMP Plan and Annual Reports Available on Website**	Make written SWMP Plan and annual reports available for review and comment via the Town's website.	Town Engineer	Allow annual review of stormwater management plan and posting of stormwater management plan on website		*	*	*	*	*	
2-2	**Sponsor Household Hazardous Waste Event**	Continue to allow public to drop off household hazardous wastes at an annual event.	DPW	Collect hazardous waste and waste oil annually	*	*	*	*	*	*	
3. Illicit Discharge Detection and Elimination											
3-1	**SSO Inventory**	The town relies entirely on septic; SSO considerations do not apply.	DPW Operations	N/A							
3-2	**Phase I Storm Sewer System Map**	1. Delineate catchment areas based on topography for each MS4 outfall and map in GIS.	DPW Operations	Updated map within 2 years of effective date of permit	*						
		2. Update outfalls, conveyances receiving waters, interconnections, MS4-owned BMPs & initial catchment delineations.			*	*					
	Phase II Storm Sewer System Map	Update outfall spatial location, pipes, manholes, catch basins, refined catchment delineations as new information becomes available.		Updated map within 10 years of effective date of permit		*	*	*	*	*	
3-3	**Written IDDE Program Development**	Develop a written IDDE program. This has been developed as a separate document.	DPW Operations, Board of Health	Written plan within 1 year of effective date of permit	*						
3-4	**Implement IDDE Program**	1. Inspect key catchment structures (manholes, catch basins) during dry weather conditions. Where flowing water is observed, collect samples for analysis.	DPW Operations, Board of Health	Problem Outfalls by July 1, 2025, all outfalls by July 1, 2028			*	*	*	*	
		2. Inspect key catchment structures (manholes, catch basins) in all catchments during dry weather conditions. Where flowing water is observed, collect samples for analysis.					*	*	*	*	
3-5	**Employee Training**	Provide annual training to employees involved in the IDDE program.	DPW Operations	Train applicable employees annually		*	*	*	*	*	
3-6	**Conduct Dry Weather Screening**	1. Inspect drainage outfalls classified as High or Low priority during dry weather.	DPW Operations	Complete 3 years after effective date of permit		*	*				
		2. Investigate potential illicit discharges, if any.				*	*	*	*	*	
		3. Enforce removal of illicit discharges, if any.				*	*	*	*	*	
3-7	**Conduct Wet Weather Screening**	Sample select outfalls with System Vulnerability Factors under wet weather conditions. Sampling can be done upon completion of any dry weather investigation, but must be completed before catchment investigation is marked as complete.	DPW Operations	Complete 10 years after effective date of permit						*	
3-8	**Ongoing Screening**	Upon completion of catchment investigations, reprioritize outfalls for ongoing screening (as needed).	DPW Operations	Conduct ongoing dry and wet weather outfall screening upon completion of the IDDE program						*	
		Continue performing dry and wet weather sampling according to the new prioritization at least once every 5 years.								*	

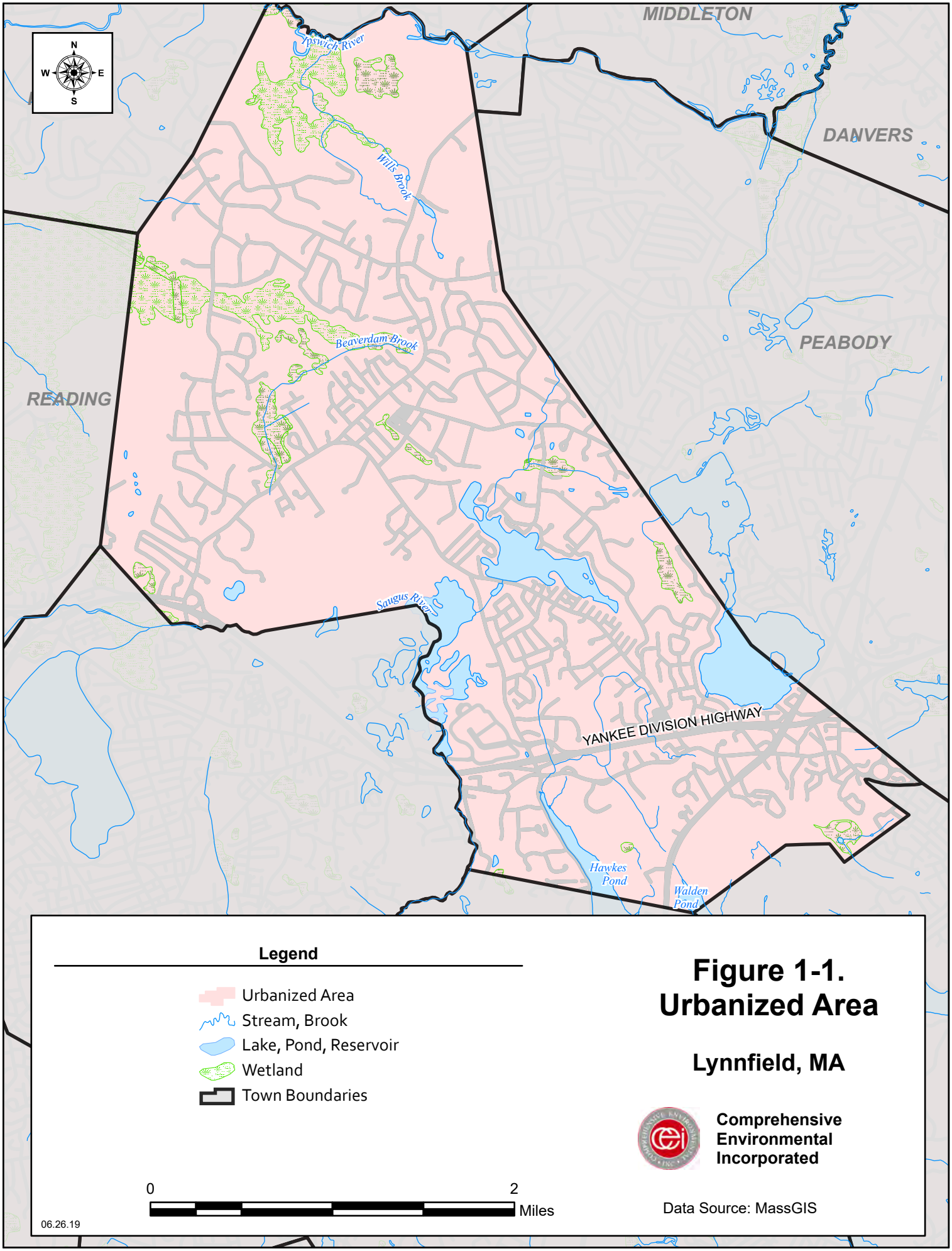
Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
4. Construction Site Stormwater Runoff Control											
4-1	**Site Inspection & Enforcement of Erosion and Sediment Control Measures**	Review and update existing requirements mandating site inspections and enforcement of erosion and sediment control measures. Review of existing regulations completed - program currently meets permit requirements.	Town Administrator, DPW, Conservation Commission, Planning	Complete within 1 year of the effective date of permit track # of inspections and enforcements	*						
4-2	**Site Plan Review**	Complete written procedures for site plan review and track the number of site review for annual reporting purposes. Review of existing regulations completed - program currently meets permit requirements. Tracking of site plan reviews will be performed.	Town Administrator, DPW, Conservation Commission, Planning	Complete within 1 year of the effective date of the permit # site plan reviews	*						
4-3	**Erosion and Sediment Control**	Adopt requirements for construction operators to implement a sediment and erosion control program. Review of existing regulations completed - program currently meets permit requirements.	Town Administrator, DPW, Conservation Commission, Planning	Complete within 1 year of the effective date of the permit	*						
4-4	**Waste Control**	Establish requirements to control construction site wastes within 1 year of the effective date of the permit. Review of existing regulations completed - program currently meets permit requirements.	Town Administrator, DPW, Conservation Commission, Planning	Complete within 1 year of the effective date of permit	*						

Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
5. Stormwater Management in New Development and Redevelopment											
5-1	**As-built Plans for On-site Stormwater Control**	As builts and O&M Plan currently required. Will develop procedures requiring long term O&M plan with dedicated funding.	Engineering, Conservation Commission, Planning	Require submission of as-built plans for completed projected	*	*					
5-2	**Target Properties to Reduce Impervious Areas**	1. Identify five properties for potential retrofits to stormwater impacts and consider the potential to reduce nitrogen discharges for properties within the Saugus River watershed and phosphorus within the Saugus River and Pillings Pond watersheds.	Engineering	Complete inventory within 4 years of the effective date of the permit and update annually on retrofitted properties				*			
		2. Track and report annually properties that have been modified or retrofitted with BMPs.						*	*	*	
5-3	**Allow Green Infrastructure**	1. Review existing by-laws, regulations and guidance to determine the feasibility of making green practices allowable.	Planning Board, Conservation Commission	Complete regulatory updates within 4 years of the effective date of the permit			*	*			
		2. Prepare a report assessing existing local regulations to determine the feasibility of allowing green roofs, infiltration practices, and water harvesting devices.						*			
5-4	**Street Design and Parking Lot Guidelines**	1. Review existing by-laws, regulations and guidance pertaining to current street and parking lot design and all regulations for ability to incorporate LID into designs.	Planning Board, Conservation Commission	Complete regulatory updates within 4 years of the effective date of the permit			*	*			
		2. Prepare a report assessing whether existing street and parking lot design regulations allow for incorporation of LID practices and recommendations for changes.						*			
5-5	**Require New and Redevelopment BMPs Meet Stormwater Standards**	Review and update bylaws to ensure that requirements are met.	Town Administrator	Complete within 2 years of effective date of permit	*	*					

Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
6. Good Housekeeping and Pollution Prevention											
6-1	**O&M Procedures**	Create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment.	DPW Operations	Complete within 2 years of the effective date of the permit		*					
6-2	**Inventory MS4 Properties**	Inventory all permittee-owned parks and open spaces, building and facilities (including storm drains), and vehicles and equipment in the regulated area.	DPW Operations	Complete within 2 years of the effective date of the permit		*					
6-3	**Infrastructure O&M**	Establish and implement program for repair and rehabilitation of MS4 infrastructure. Infrastructure O&M SOPs will be included in the Town's O&M Manual as they are developed.	DPW Operations	Complete within 2 years of permit effective date		*					
6-4	**SWPPPs**	Evaluate the need for SWPPPs for municipal maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater. Complete SWPPP or document No Exposure as applicable.	DPW Operations	Document whether a SWPPP is needed and where required, prepare SWPPP by July 1, 2020		*					
6-5	**Catch Basin Cleaning**	1. Develop a plan for collecting catch basin cleaning data for use in developing an optimization plan. Establish and implement cleaning schedule to maintain catch basins so that they remain less than 50% full of sediment. Properly manage storage of catch basin residuals.	DPW Operations	Plan for collecting catch basin cleaning data	*						
		2. Collect catch basin cleaning data.		Database of data collected during catch basin cleaning		*	*				
		3. Develop and implement a schedule for optimizing catch basin cleaning with a goal that catch basins remain less than 50% full of sediment.		Implement catch basin cleaning optimization program				*	*	*	
6-6	**Street Sweeping**	Develop and implement program for sweeping streets. Properly manage storage of street sweeping residuals.	DPW Operations	Sweep all streets and parking lots in accordance with plan		*	*	*	*	*	
6-7	**Road Salt Use Optimization Program**	1. Establish procedures for proper winter road maintenance, including use and storage of salt and sand, and procedures to minimize the use of road salt.	DPW Operations	Complete within 1 year of the effective date of the permit	*						
		2. Implement winter road maintenance procedures.		Implement salt use optimization during winter maintenance operations		*	*	*	*	*	
6-8	**Inspection and Maintenance of Stormwater Treatment Structures**	Annually inspect MS4-owned stormwater treatment BMPs. Document inspections and maintenance performed.	DPW Operations	Inspect and maintain treatment structures at least annually	*	*	*	*	*	*	

Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
7. TMDL and Impaired Waters											
Pathogen TMDL and Water Quality Limited Waterbodies - Hawkes Brook, Saugus River, Beaverdam Brook											
7-1	**Public Education**	Include management of pet waste and septic system maintenance with the Residential public education program.	DPW Operations	Distribute materials with Residential education program	*	*	*	*	*	*	
7-2	**IDDE**	Designate catchment draining to bacteria/pathogen impaired segments as "Problem Catchments" or "High" priority catchments in IDDE ranking.	DPW Operations	Complete initial ranking within 1 year of the effective date of the permit	*						
Nitrogen Water Quality Limited Waterbodies - Saugus River											
7-3	**Public Education**	Include fertilizer use, disposal of grass clippings and leaf litter, and pet waste management with the Residential and Commercial public education programs.	DPW Operations	Distribute materials with Residential and Commercial education programs	*	*	*	*	*	*	
	Regulatory Updates	Include a requirement in the regulatory mechanism that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal.	DPW Operations	Complete ordinance updates within 2 years of the effective date of the permit		*					
	MS4 Property Retrofits	Consider BMPs to reduce nitrogen discharges when identifying MS4 properties for retrofits.	DPW Operations	Evaluate stormwater BMPs for nitrogen removal during facility inventory within 4 years of the effective date of the permit				*			
	O&M - Lawn and Leaf Care	Incorporate nitrogen reduction practices into Town good housekeeping practices such as fertilizer use and managing grass cuttings and leaf litter.	DPW Operations	Incorporate procedures into written O&M Plan		*					
	Increased Street Sweeping	Increase street sweeping to twice per year (spring and fall) for catchment areas that discharge to MS4 areas within nitrogen-impaired waterbody watersheds.	DPW Operations	Sweep all streets and parking lots within nitrogen-impaired watersheds twice per year		*	*	*	*	*	
	Nitrogen Source Identification Report	1. Prepare a Nitrogen Source Identification Report to identify, delineate, and prioritize catchments with high nitrogen loading and identify potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.	DPW Operations	Complete Nitrogen Source Identification Report within 4 years of the effective date of the permit				*			
		2. Evaluate municipal properties for potential BMPs to construct one that will treat nitrogen, determine estimated costs, and determines engineering and regulatory feasibility.	DPW Operations	Evaluate municipal facilities within 5 years of the permit effective date to determine candidates for a nitrogen BMP					*	*	
	Demonstration BMP	1. Design and install structural and non-structural BMPs to remove nitrogen from stormwater runoff.	DPW Operations	Install demonstration BMP within 6 years of the effective date of the permit					*	*	
		2. Track BMPs installed, including type, location, total area treated, design storage volume and estimated nitrogen removal and report annually to EPA and MassDEP.	DPW Operations	Summary progress table						*	

Table 11-1. Best Management Practices Plan Summary											
					Year / Schedule						
					1	2	3	4	5	6+	
BMP ID	BMP	Description	Responsible Department	Measurable Goal	7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24	
7. TMDL and Impaired Waters											
Phosphorus Water Quality Limited Waterbodies - Pillings Pond and Saugus River											
7-4	**Public Education**	Include fertilizer use, disposal of grass clippings and leaf litter, and pet waste management with the Residential and Commercial public education programs.	DPW Operations	Distribute materials with Residential and Commercial education programs	*	*	*	*	*	*	
	Regulatory Updates	Include a requirement in the regulatory mechanism that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.	DPW Operations	Complete ordinance updates within 2 years of the effective date of the permit		*					
	MS4 Property Retrofits	Consider BMPs to reduce phosphorus discharges when identifying MS4 properties for retrofits.	DPW Operations	Evaluate stormwater BMPs for phosphorus removal during facility inventory within 4 years of the effective date of the permit				*			
	O&M - Lawn and Leaf Care	Good Housekeeping and Pollution Prevention. Incorporate phosphorus reduction practices into Town good housekeeping practices such as fertilizer use and managing grass cuttings and leaf litter.	DPW Operations	Incorporate procedures into written O&M Plan		*					
	Increased Street Sweeping	Good Housekeeping and Pollution Prevention. Increase street sweeping to twice per year (spring and fall) for catchment areas that discharge to MS4 areas within phosphorus-impaired waterbody watersheds.	DPW Operations	Sweep all streets and parking lots within phosphorus-impaired waterbody watersheds twice per year		*	*	*	*	*	
	Phosphorus Source Identification Report	1. Prepare a Phosphorus Source Identification Report to identify, delineate, and prioritize catchments with high phosphorus loading and identify potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.	DPW Operations	Complete Phosphorus Source Identification Report within 4 years of the effective date of the permit				*			
		2. Evaluate municipal properties for potential BMPs to construct one that will treat phosphorus, determine estimated costs, and determines engineering and regulatory feasibility.	DPW Operations	Evaluate municipal facilities within 5 years of the permit effective date to determine candidates for a phosphorus BMP					*	*	
	Demonstration BMP	1. Design and install structural and non-structural BMPs to remove phosphorus from stormwater runoff.	DPW Operations	Installed demonstration BMP within 6 years of the effective date of the permit					*	*	
		2. Track BMPs installed, including type, location, total area treated, design storage volume and estimated phosphorus removal and report annually to EPA and MassDEP.	DPW Operations	Summary progress table						*	
Turbidity Water Quality Limited Waterbodies - Hawkes Pond and Saugus River											
7-5	**Regulatory Updates**	Mandate that designs of stormwater systems on commercial and industrial land uses allow for spill containment.	DPW Operations	Adopt new design guidelines for commercial and industrial construction		*					
	Increased Street Sweeping	Increase street sweeping for areas with higher pollutant loads.	DPW Operations	Increase street sweeping if needed		*	*	*	*	*	



Legend

- Urbanized Area
- Stream, Brook
- Lake, Pond, Reservoir
- Wetland
- Town Boundaries

0 2 Miles

06.26.19

Figure 1-1. Urbanized Area

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Source: MassGIS

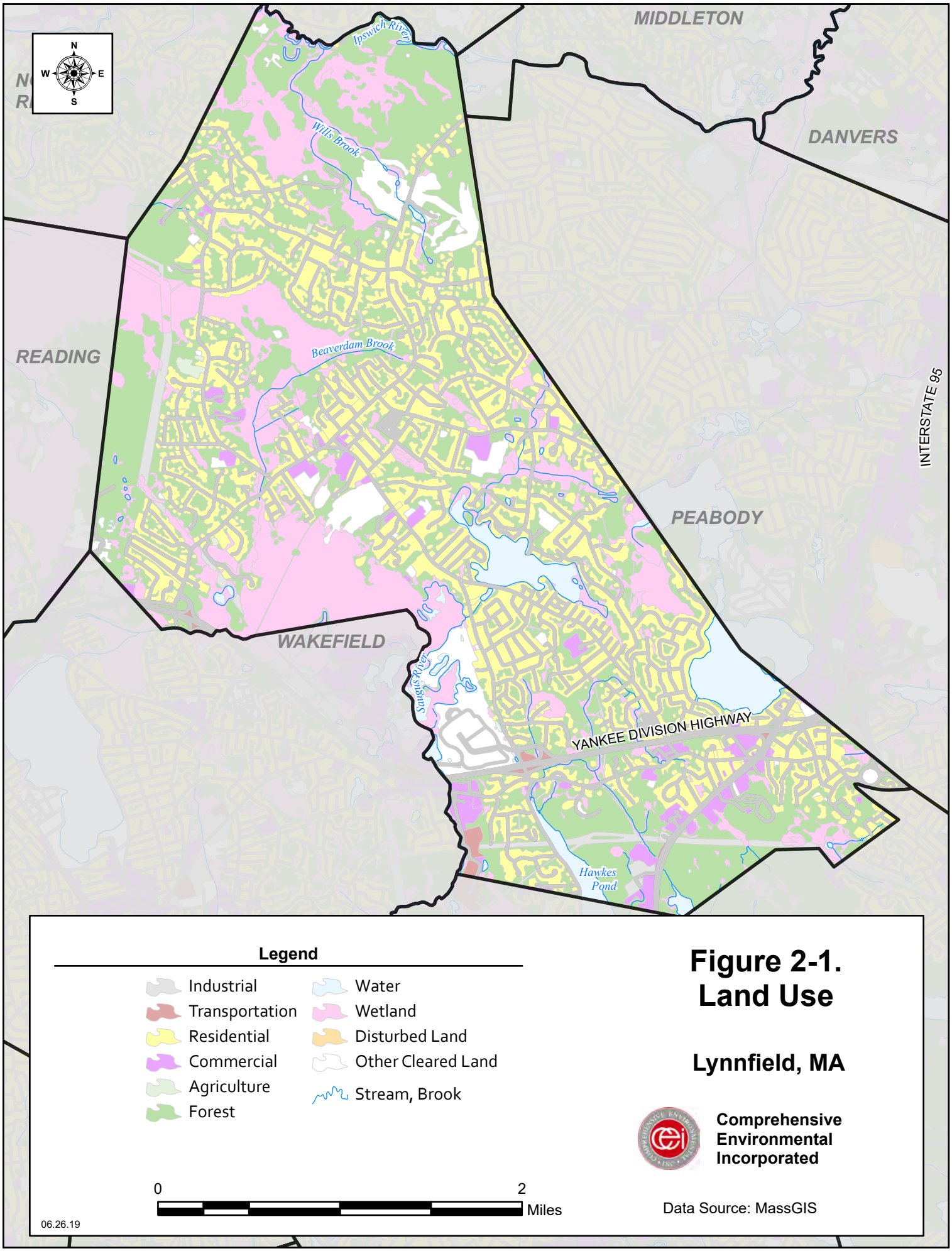
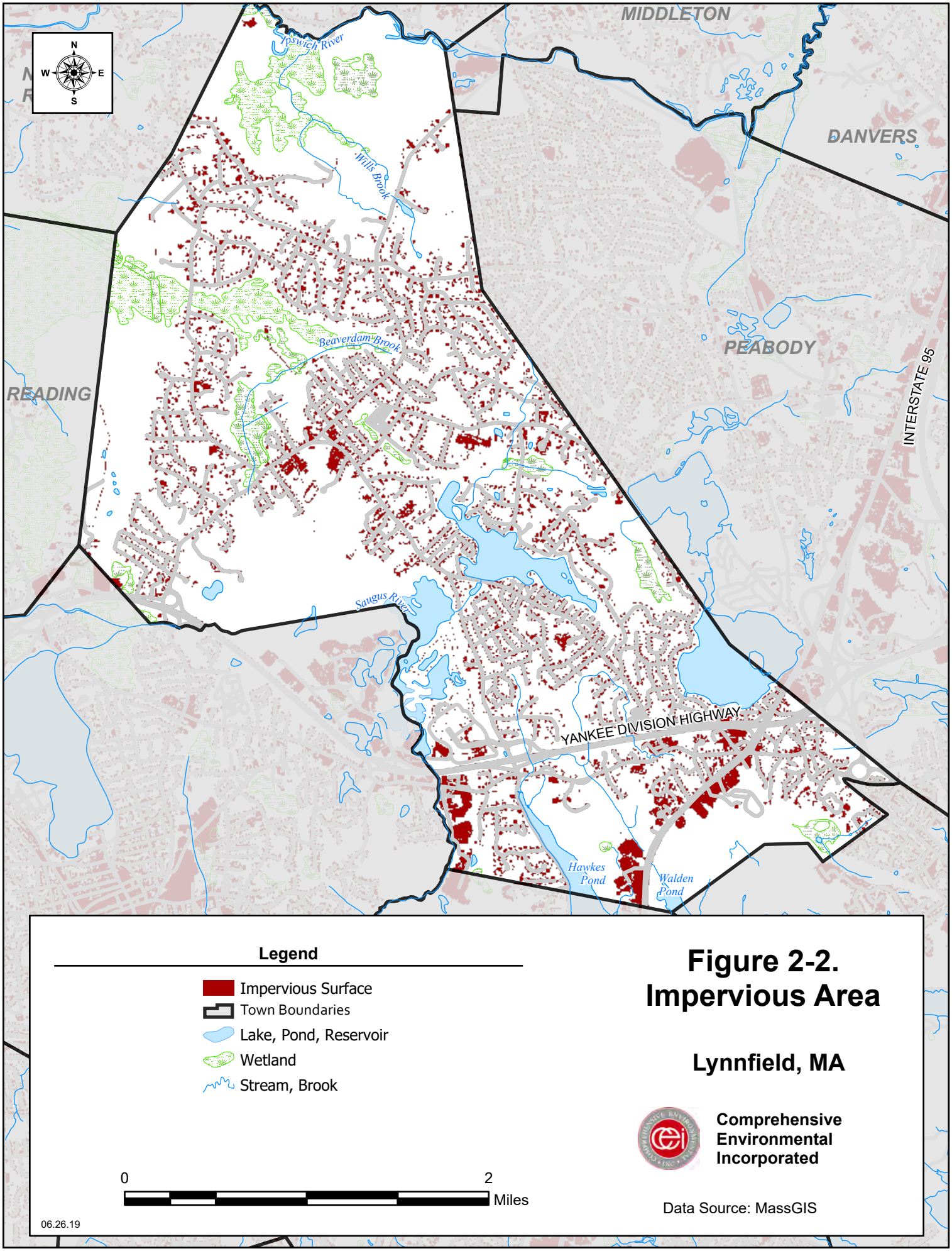


Figure 2-1. Land Use

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Source: MassGIS



Legend

- Impervious Surface
- Town Boundaries
- Lake, Pond, Reservoir
- Wetland
- Stream, Brook

0 2 Miles

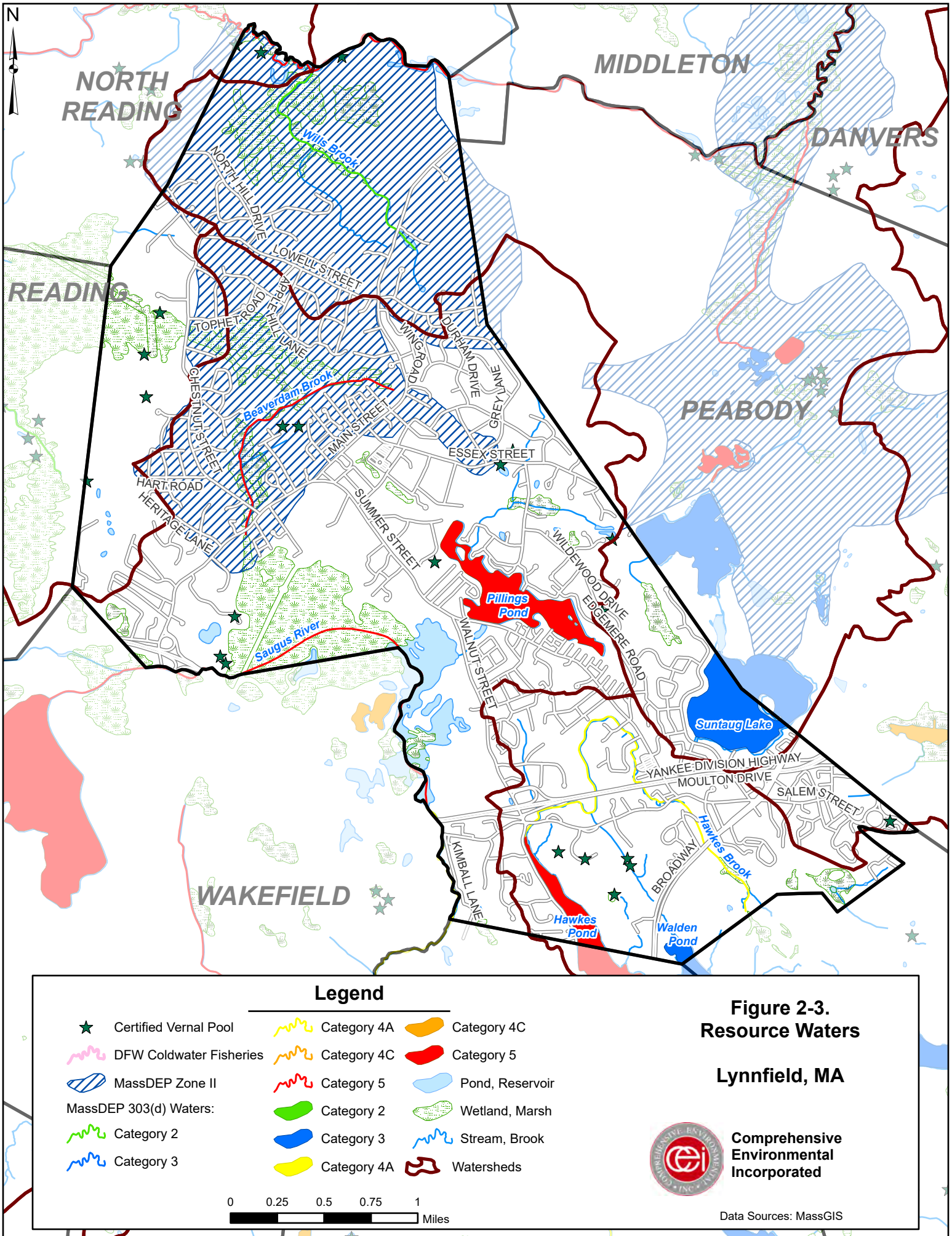
06.26.19

Figure 2-2. Impervious Area

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Source: MassGIS


N
NORTH READING
MIDDLETON
DANVERS
READING
PEABODY
WAKEFIELD
Wills Brook
NORTH HILL DRIVE
LOWELL STREET
TOPHET ROAD
PARK HILL LANE
CHESTNUT STREET
Beaverdam Brook
WING ROAD
DURHAM DRIVE
GREY LANE
MAIN STREET
ESSEX STREET
HART ROAD
HERITAGE LANE
SUMMER STREET
WILDEWOOD DRIVE
EDGEMERE ROAD
Pillings Pond
Saugus River
WALNUT STREET
Suntaug Lake
YANKEE DIVISION HIGHWAY
MOULTON DRIVE
SALEM STREET
BROADWAY
Hawkes Brook
KIMBALL LANE
Hawkes Pond
Walden Pond
Legend
Certified Vernal Pool
DFW Coldwater Fisheries
MassDEP Zone II
MassDEP 303(d) Waters:
Category 2
Category 3
Category 4A
Category 4C
Category 5
Category 2
Category 3
Category 4A
Category 4C
Category 5
Pond, Reservoir
Wetland, Marsh
Stream, Brook
Watersheds
0 0.25 0.5 0.75 1
Miles
Figure 2-3.
Resource Waters
Lynnfield, MA
Comprehensive Environmental Incorporated
Data Sources: MassGIS
12/13/2021

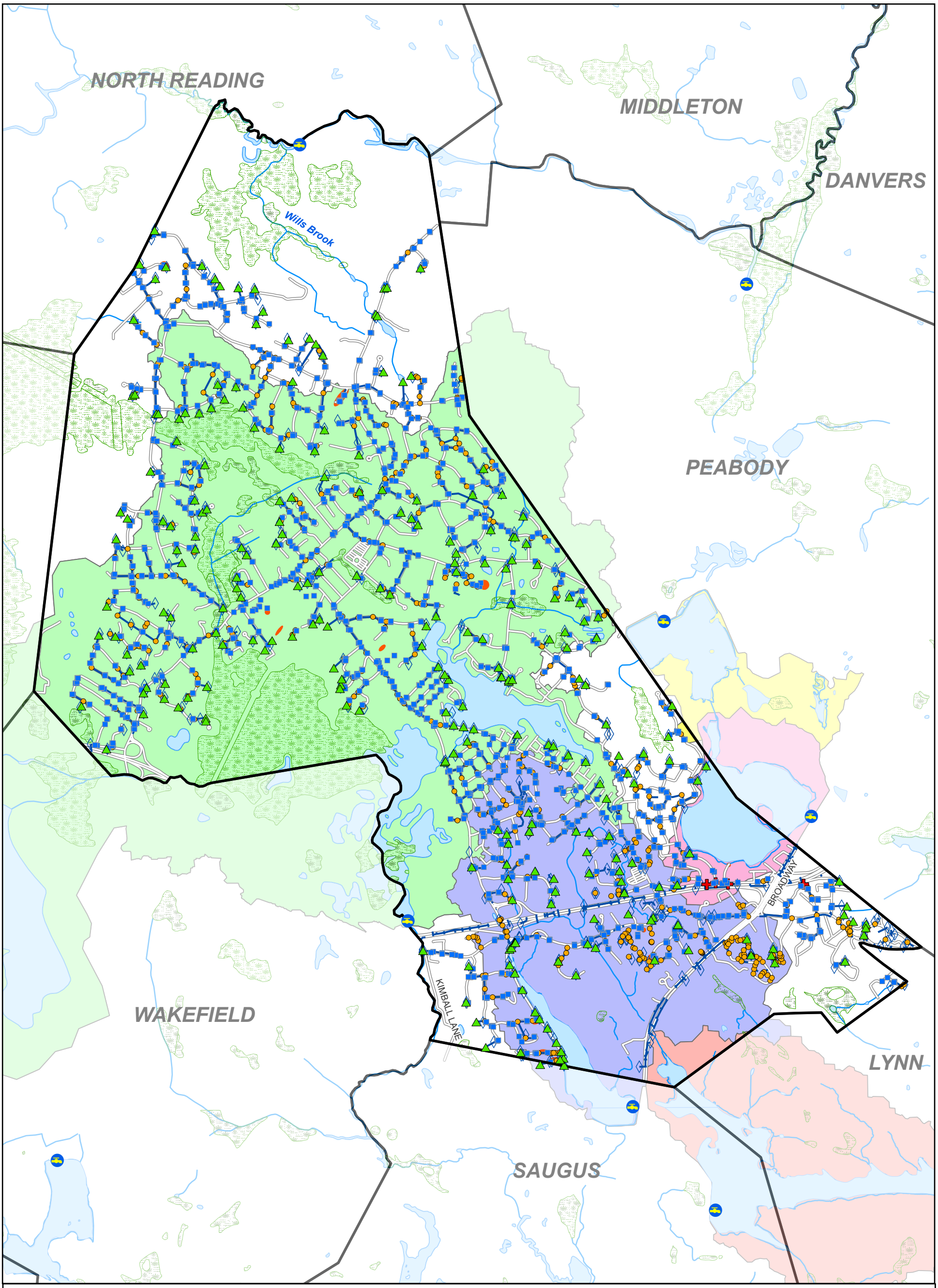


Figure 2-4
Stormwater Infrastructure in Surface Water Supply Watersheds
Lynnfield, MA

Comprehensive Environmental Incorporated

11/29/2021

Appendix A

Notice of Intent and Authorization to Discharge

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

VIA EMAIL

March 5, 2019

Robert Dolan
Town Administrator

And;

John Tomasz
DPW Director
55 Summer Street
Lynnfield, MA. 01940
dpw@town.lynnfield.ma.us

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041045, Town of Lynnfield

Dear John Tomasz:

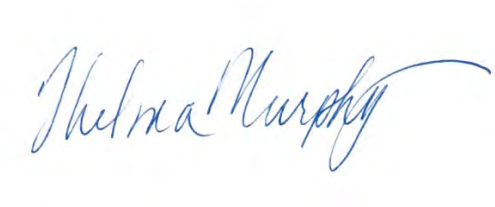
The 2016 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 General Permit) is a jointly issued EPA-MassDEP permit. Your Notice of Intent (NOI) for coverage under this MS4 General Permit has been reviewed by EPA and appears to be complete. You are hereby granted authorization by EPA and MassDEP to discharge stormwater from your MS4 in accordance with the applicable terms and conditions of the MS4 General Permit, including all relevant and applicable Appendices. This authorization to discharge expires at midnight on **June 30, 2022.**

For those permittees that certified Endangered Species Act eligibility under Criterion C in their NOI, this authorization letter also serves as EPA's concurrence with your determination that your discharges will have no effect on the listed species present in your action area, based on the information provided in your NOI.

As a reminder, your first annual report is due by **September 30, 2019** for the reporting period from May 1, 2018 through June 30, 2019.

Information about the permit and available resources can be found on our website: https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit. Should you have any questions regarding this permit please contact Newton Tedder at tedder.newton@epa.gov or (617) 918-1038.

Sincerely,



Thelma Murphy, Chief
Stormwater and Construction Permits Section
Office of Ecosystem Protection
United States Environmental Protection Agency, Region 1

and;

Lealdon Langley, Director
Wetlands and Wastewater Program
Bureau of Water Resources
Massachusetts Department of Environmental Protection

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

Part I: General Conditions

General Information

Name of Municipality or Organization: Lynnfield State: MA

EPA NPDES Permit Number (if applicable): MA041045

Primary MS4 Program Manager Contact Information

Name: John Tomasz Title: DPW Director

Street Address Line 1: 55 Summer St

Street Address Line 2:

City: Lynnfield State: MA Zip Code: 01940

Email: dpw@town.lynnfield.ma.us Phone Number: (781) 334-9500

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed): DPW, 55 Summer St, Lynnfield, MA, 01940

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)

Copy Enclosed (Appendix A)

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): 04/26/10

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): 04/26/10

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): 04/26/10

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
Bates Brook (Feeds to Pillings Pond)	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributaries to Bates Brook	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributaries to MA92-07 Bear Meadow Brook	16	☐	☐	☐	☐	☐	☐	☐	☐	☐	Bear Meadow Brook attaining some uses; other uses not assesseed
MA93-30 Beaverdam Brook (Feeds to Saugus River)	6	☐	☐	☒	☐	☐	☐	☐	☒	☐	Fecal Coliform TMDL CN 155.0
Unnamed Tributaries to Beaverdam Brook	44	☐	☐	☐	☐	☐	☐	☐	☐	☐	See Beaverdam Brook Impairments
Unnamed Tributaries to MA93013 Cedar Pond	14	☐	☐	☐	☐	☐	☐	☐	☐	☐	Non native aquatic plants in Cedar Pond
MA93-32 Hawkes Brook (Feeds to Hawkes Pond)	17	☐	☐	☐	☐	☐	☐	☐	☒	☐	Fecal Coliform TMDL CN 155.0
Unnamed Tributaries to Hawkes Brook	54	☐	☐	☐	☐	☐	☐	☐	☐	☐	See Hawkes Brook
MA93032 Hawkes Pond	13	☐	☐	☐	☐	☐	☐	☒	☐	☐	
Unnamed Tributaries to Hawkes Pond	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	See Hawkes Pond
MA93056 Pillings Pond (Feeds to Saugus River)	22	☐	☒	☒	☐	☐	☒	☐	☐	☐	Excess Algal Growth, secchi disk transparency
Unnamed Tributaries to Pillings Pond	16	☐	☐	☐	☐	☐	☐	☐	☐	☐	See Pillings Pond Impairments
Unnamed Tributaries to MA93-34 Saugus River	47	☐	☐	☐	☐	☐	☐	☐	☐	☐	MA93-34 Saugus River Impairments: Nitrogen, Phosphorous, Turbidity, Fecal Coliform TMDL CN 155.0, Excess Algal Growth, Aquatic Plants, Physical Substrate Habitat Alterations, Fish passage barrier
MA93-35 Saugus River	1	☐	☐	☐	☐	☐	☐	☐	☒	☐	Fecal Coliform TMDL CN 155.0, Low Flow Alterations, Alterations in Streamside or Littoral Vegetative Cover
Unnamed Tributaries to MA93-35 Saugus River	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	See MA93-35 Saugus River Impairments
MA92065 Suntaug Lake	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributaries to Suntaug Lake	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
MA92-10 Wills Brook (Feeds to Ipswich River)	3	☐	☐	☒	☐	☐	☐	☐	☐	☐	Fecal Coliform

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 Tributaries to Wills Brook	22	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributaries to MA92077 Winona Pond	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	Winona Pond not assessed
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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		☐	☐	☐	☐	☐	☐	☐	☐	☐	

Click to lengthen table

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

Part III: Stormwater Management Program Summary

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

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

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	**BMP Description**	**Targeted Audience**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal**	**Beginning Year of BMP Imple-mentation**
Brochures/Pamphlets	Distribute fact sheets or brochures on pet waste pickup with dog licenses	Residents	Town Clerk	Provide information with all dog registrations/ licenses - track number of registrations issued	2019
Web Page	Provide information on website related to septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide & fertilizer use, grass clippings and leaf litter disposal, and car washing	Residents	DPW Operations & Information Technology	Addition to website with periodic updates	2019
Web Page	Provide information on website related to pesticide and fertilizer use, grass clippings and leaf litter disposal, building maintenance, salt usage, storage of materials and wastes, car washing, and the benefits of infiltration	Businesses, Institutions and Commercial Facilities	DPW Operations & Information Technology	Addition to website with periodic updates	2019

Web Page	Provide information on website related to erosion and sediment control, LID, and Construction General Permit	Developers (construction)	Planning/zoning Department & Information Technology	Addition to website with periodic updates	2019
Brochures/Pamphlets	Distribute fact sheets or brochures on erosion and sediment control with permit applications	Developers (construction)	Planning/zoning Department & Information Technology	Provide information with all applications	2019
Social Media	Provide relevant stormwater information to different audiences via social media	Residents, Businesses, Institutions and Commercial Facilities, Developers (Construction), Industrial	Planning/zoning Department & Information Technology	Follow statewide "Think Blue" campaign on social media platforms	2019
Newspaper Articles/Press Releases	Issue press releases using Think Blue topics and templates	Residents, Businesses, Institutions and Commercial Facilities, Developers (Construction), Industrial	Department of Public Works	Issue periodic press releases in Town newspaper	2019
Brochures/Pamphlets	Print and post Think Blue flyers at Town Hall	Residents, Businesses, Institutions and Commercial Facilities, Developers (Construction), Industrial	Department of Public Works	Continue to update and distribute flyers at Town Hall	2019

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

Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Implementation
Public Review	SWMP Review	Town Engineer	Allow annual review of stormwater management plan and posting of stormwater management plan on website	2018
Public Participation	Provide a link to contact information for program comments	Town Engineer	Allow public to comment on stormwater management plan annually	2018
Public Participation	Household haz. waste/used oil collection	DPW Operations	Collect Haz. waste and waste oil annually	2018

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

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
SSO inventory	Develop SSO inventory in accordance of permit conditions	DPW Operations	Complete within 1 year of effective date of permit	2018
Storm sewer system map	Create map and update during IDDE program completion	DPW Operations	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	DPW Operations, Board of Health	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	DPW Operations, Board of Health	Complete 10 years after effective date of permit	2020
Employee training	Train employees on IDDE implementation	DPW Operations	Train annually	2019
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	DPW Operations	Complete 3 years after effective date of permit	2019
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	DPW Operations	Complete 10 years after effective date of permit	2023
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	DPW Operations	Complete ongoing outfall screening upon completion of IDDE program	2028

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

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Town Administrator, DPW, Conservation Commission, Planning	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Town Administrator, DPW, Conservation Commission, Planning	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	Town Administrator, DPW, Conservation Commission, Planning	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	Town Administrator, DPW, Conservation Commission, Planning	Complete within 1 year of the effective date of permit	2018

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

Part III: Stormwater Management Program Summary (continued)

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

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Engineering, Conservation Commission, Planning	Require submission of as-built plans for completed projects	2018
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Engineering	Complete 4 years after effective date of permit and report annually on retrofitted properties	2021
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Planning Board, Conservation Commission	Complete 4 years after effective date of permit and implement recommendations of report	2020
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.	Planning Board, Conservation Commission	Complete 4 years after effective date of permit and implement recommendations of report	2020

Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook	Adoption, amendment, or modification of a regulatory mechanism to meet permit requirements	Town Administrator	Complete 2 years after effective date of permit	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	DPW Operations	Complete and implement 2 years after effective date of permit	2019
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	DPW Operations	Complete 2 years after effective date of permit and implement annually	2019
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	DPW Operations	Complete 2 years after effective date of permit	2019
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	DPW Operations	Complete and implement 2 years after effective date of permit	2019
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	DPW Operations	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018
Street sweeping program	Sweep all streets and permitee-owned parking lots in accordance with permit conditions	DPW Operations	Sweep all streets and permitee-owned parking lots once per year in the spring	2018
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	DPW Operations	Implement salt use optimization during deicing season	2018

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	DPW Operations	Inspect and maintain treatment structures at least annually	2018

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)
North Coastal Watershed (Bactria/Pathogen)	Adhere to requirements in part A.III of Appendix F	DPW Operations

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

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

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

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Turbidity	MA93032 Hawkes Pond	Adhere to requirements in part V of Appendix H	DPW Operations
Phosphorus	MA93056 Pillings Pond	Adhere to requirements in part II of Appendix H	DPW Operations
Turbidity	MA93-34 Saugus River	Adhere to requirements in part V of Appendix H	DPW Operations
Phosphorus	MA93-34 Saugus River	Adhere to requirements in part II of Appendix H	DPW Operations
Nitrogen	MA93-34 Saugus River	Adhere to requirements in part I of Appendix H	DPW Operations
Fecal Coliform	MA92-10 Wills Brook	Adhere to requirements in part III of Appendix H	DPW Operations
		Adhere to requirements in part III of Appendix H	
		Adhere to requirements in part III of Appendix H	

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.

Because the Town of Lynnfield's population relies on septic systems for wastewater management, SSO considerations will not apply to the Town's program.

Wills Brook is listed on the Final 2014 Massachusetts Year 2014 Integrated List of Waters for Fecal Coliform and DO; however, the proposed 2016 list indicates that the WQS for fecal coliform has been attained and the original basis for listing DO was incorrect. The 2014 listings are indicated on this NOI. Once the 2016 list is approved, Lynnfield will not be required to meet Appendix H for discharges to this waterbody.

Public education messages to the same audience will be spaced at least a year apart or are ongoing.

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: Robert Dolan

Title: Town Administrator

Signature: Robert Dolan

Digitally signed by Robert Dolan
DN: cn=Robert Dolan, o=Town of Lynnfield, ou=Town Admidstrator, email=rdolan@town.lynnfield.ma.us, c=US
Date: 2018.09.27 13:50:24 -04'00'

Date:

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

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

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 27, 2018
Consultation Code: 05E1NE00-2018-SLI-2529
Event Code: 05E1NE00-2018-E-05925
Project Name: Lynnfield MS4 Endangered Species Review

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-2529

Event Code: 05E1NE00-2018-E-05925

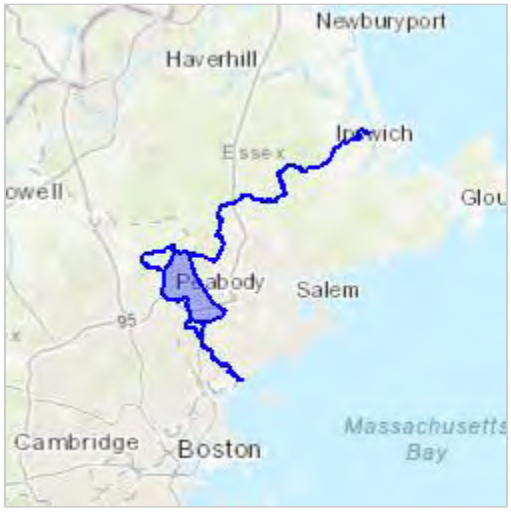
Project Name: Lynnfield MS4 Endangered Species Review

Project Type: LAND - DRAINAGE

Project Description: Determination of impact of stormwater discharges and discharge related activities to threatened and endangered species per Appendix C of the MA MS4 General Permit. Stormwater discharge occurs from pre-existing outfalls within the regulated zone, as shown on the map.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.56949582891032N71.04773460877657W



Counties: Essex, MA | Middlesex, MA | Suffolk, MA

Endangered Species Act Species

There is a total of 3 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

Birds

NAME	STATUS
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern *Sterna dougallii dougallii* Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Critical habitats

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

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

September 24, 2018

To whom it may concern:

The U.S. Fish and Wildlife Service (USFWS) reviewed the stormwater discharge activities associated with the 2016 National Pollutant Discharge and Elimination System (NPDES) Massachusetts (MA) Small Municipal Separate Storm Sewer System (MS4) general permit (MA MS4 General Permit) issued by the Environmental Protection Agency (EPA). We determined those activities may affect, but are not likely to adversely affect, certain species listed under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) when specific conditions are met. When these conditions are met, we do not need to review individual projects. These comments are provided in accordance with section 7 of the ESA and complement existing 2016 MA MS4 General Permit Appendix C Guidance. We understand the applicant is acting as a non-Federal representative of the EPA for the purpose of consultation under section 7. **This letter provides additional guidance for meeting Criterion B and should be submitted as part of your application package to the EPA.**

If the USFWS Information for Planning and Consultation website (https://ecos.fws.gov/ipac/) indicates your MA MS4 General Permit project action area may contain one or more of the following federally listed endangered species: roseate tern (*Sterna dougallii*), northern red-bellied cooter (*Pseudemys rubriventris*), dwarf wedgemussel (*Alasmidonta heterodon*), rusty patched bumble bee (*Bombus affinis*), northeastern bulrush (*Scirpus ancistrochaetus*), or American chaffseed (*Schwalbea americana*); threatened species: piping plover (*Charadrius melodus*), bog turtle (*Glyptemys muhlenbergii*), Puritan tiger beetle (*Cicindela puritana*), northeastern beach tiger beetle (*Cicindela dorsalis*), or red knot (*Calidris canutus rufa*); or their federally designated critical habitat; and the specific conditions listed below are met, you may submit this letter to complete the **MA MS4 General Permit Appendix C: Step 4** in place of a concurrence letter for informal consultation as documentation of ESA eligibility for **USFWS Criterion B**.

In addition, this letter also satisfies the requirement in the **MA MS4 General Permit Appendix C: Step 2 (3)** to contact the USFWS and obtain a concurrence letter, if you have not yet done so. If your project action area includes one or more of the above-listed species *and* one or more of the

species listed under **Criterion C,**[1] you may still use this letter to certify under **Criterion B**. All existing guidance regarding requirements for certifying eligibility according to the USFWS Criterion A, B, or C for coverage by the 2016 MS4 Permit (see MA MS4 General Permit Appendix C – Endangered Species Guidance) remains unchanged.

We have determined that proposed stormwater discharge activities covered under the 2016 MS4 Permit *may affect, but are not likely to adversely affect*, the above-listed species and the species' critical habitat when the following are true:

1. all stormwater discharges are pre-existing or previously permitted by EPA;
2. any planned operations and maintenance work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. In these situations the chance of encountering any of the subject species is discountable;
3. the project implements EPA MS4 Best Management Practices (BMPs) and meets Clean Water Act and Massachusetts Water Quality Standards. Although permitted discharges may reach the environment used by these species, BMPs reduce pollutants to the extent that discharges are not known to have measurable impacts on these species or their habitat;
4. no new construction or structural BMPs are proposed under this permit at this time; and
5. you agree that if, during the course of the permit term, you plan to install a structural BMP not identified in the Notice of Intent (NOI), you will re-initiate consultation with the USFWS as necessary (see **MA MS4 General Permit Appendix C: Step 2 (5)**).

If the above criteria are met, further consultation with the USFWS under section 7 of the ESA is not required at this time; however, if the proposed action changes in any way such that it may affect a listed species in a manner not previously analyzed or if new information reveals the presence of additional listed species that may be affected by the project, the applicant or the EPA should contact us immediately and suspend activities that may affect those species until the appropriate level of consultation is completed with our office. Thank you for your cooperation, and please contact David Simmons of this office at (603) 227-6425 if you have questions or need further assistance.

Sincerely yours,

Thomas R Chapman
Supervisor
New England Field Office

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[1] Criterion C includes guidance for project action areas that may contain species for which EPA has already made a determination. These species include the northern long-eared bat (*Myotis septentrionalis*), sandplain gerardia (*Agalinis acuta*), small whorled pogonia (*Isotria medeoloides*), and/or American burying beetle (*Nicrophorus americanus*) (MA MS4 General Permit Appendix C: Step 3 – Determine if You Can Meet Eligibility USFWS Criterion C).

United States Department of the Interior

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In Reply Refer To: July 27, 2018
Consultation Code: 05E1NE00-2018-SLI-2529
Event Code: 05E1NE00-2018-E-05925
Project Name: Lynnfield MS4 Endangered Species Review

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Project Summary

Consultation Code: 05E1NE00-2018-SLI-2529

Event Code: 05E1NE00-2018-E-05925

Project Name: Lynnfield MS4 Endangered Species Review

Project Type: LAND - DRAINAGE

Project Description: Determination of impact of stormwater discharges and discharge related activities to threatened and endangered species per Appendix C of the MA MS4 General Permit. Stormwater discharge occurs from pre-existing outfalls within the regulated zone, as shown on the map.

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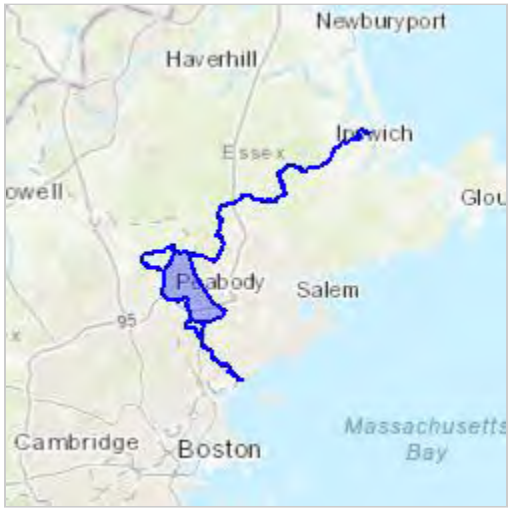

Counties: Essex, MA | Middlesex, MA | Suffolk, MA

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Mammals

NAME	STATUS
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Birds

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Critical habitats

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

Appendix B

Impaired Waterbodies Updates

Changes to Impaired Waters List from 2014 303(d) List
Lynnfield, MA

Waterbody Name	Segment ID and Category		Impairment(s)	Approved TMDL	Changes from 2014 303(d) & Year
Hawkes Brook	MA93-32	4a	Fecal Coliform	50120	
			Escherichia coli	50120	Added 2016
Saugus River	MA93-35	4a	(Alteration in stream-side or littoral vegetative covers*)		
			(Low flow alterations*)		
			Fecal Coliform	50120	
			Escherichia coli	50120	Added 2016
Beaverdam Brook	MA93-30	5	Fecal Coliform	50120	
			Dissolved Oxygen		
			Escherichia coli	50120	Added 2016
Hawkes Pond	MA93032	5	Turbidity		
Pillings Pond	MA93056	5	Chlorophyll-a		
			Dissolved Oxygen Saturation		
			Excess Algal Growth		
			Dissolved Oxygen		
			Phosphorus		
			Secchi disk transparency		
Saugus River	MA93-34	5	(Fish-Passage Barrier*)		
			(Physical substrate habitat alterations*)		
			Aquatic Plants (Macrophytes)		Removed 2016
			Excess Algal Growth		
			E. Coli	50120	Added 2016
			Fecal Coliform	50120	
			Nitrogen		
			Phosphorus		
			Turbidity		
Willis Brook	MA92-10	5	Fecal Coliform		Removed 2016
			DO		Removed 2016

Notes:

Impairments added in the 2016 303(d) list are highlighted in blue in the table.
Impairments removed in the 2016 303(d) list are highlighted in green in the table.

Category 4a Waters – impaired waters with a completed TMDL.
Category 5 Waters – impaired waters that require a TMDL.

Appendix C

Regulatory Review and Legal Authorization

MS4 REGULATORY REVIEW – TOWN OF LYNNFIELD

TO: Town of Lynnfield
FROM: Rebecca Balke, P.E., CEI
DATE: May 9, 2019
SUBJECT: MS4 Regulatory Review

Comprehensive Environmental Inc. has performed a preliminary review of Lynnfield's existing bylaws and applicable regulations to determine compliance with Section 2.3.4.a of Minimum Measure 3 – Illicit Discharge Detection and Elimination (IDDE) Program, and Section 2.3.5 of Minimum Measure 4 – Construction Site Stormwater Runoff Control of the 2016 Massachusetts MS4 General Permit. The bylaws and regulations that were reviewed include the following:

- Chapter 213 Stormwater Management, General Legislation, adopted 4/27/2010
- Stormwater Rules and Regulations

The MS4 Permit also requires regulated communities to develop or modify, as appropriate, its regulatory mechanism for post construction stormwater management by the end of Year 2 of the permit term. The revisions will include the incorporation of specific design criteria as outlined in the permit. Given the minor nature of the comments below, CEI recommends that all updates be performed at the same time during Year 2. Written procedures outside of the regulations, such as inspection checklists, can be developed in the interim to satisfy the MS4 requirements.

The following table summarizes the requirements of the permit, existing regulatory mechanisms in the Town that address the requirements and to what extent, and recommendations for regulatory updates or supplemental information for full compliance.

Minimum Measure 3 – Illicit Discharge, Detection, and Elimination		
Required Elements	**Current Municipal Regulatory Requirements**	**Recommended Changes**
Section 2.3.4.a. Have adequate legal authority to: • Prohibit illicit discharges. • Investigate suspected illicit discharges. • Eliminate illicit discharges, including those from properties not owned or controlled by the Town. • Implement appropriate enforcement procedure and actions.	Stormwater Management By-Law, Article I, "Non-Stormwater Discharges" gives the Town the legal authority to prohibit, investigate, and eliminate illicit discharges — including those from properties not controlled by the Town. It also gives the Town the authority to implement appropriate enforcement actions.	No changes are recommended. The current bylaws meet the requirements of section 2.3.4.a. as written.

MS4 REGULATORY REVIEW – TOWN OF LYNNFIELD

Minimum Measure 4 – Construction Site Stormwater Runoff Control		
Required Elements	**Current Municipal Regulatory Requirements**	**Recommended Changes**
Section 2.3.5.a. Implement program that reduces stormwater pollutants at construction sites >1 acre, or < 1 acre if part of a development that will disturb >1 acre.	Stormwater Management By-Law, Article II, "Construction and Post-Construction Stormwater Management for New Developments and Redevelopments" regulates construction sites that disturb >1 acre of land, or < 1 acre if part of a development that will disturb >1 acre. The purpose of the bylaw is to reduce the impact of stormwater pollutants from construction sites.	No changes are recommended. The current bylaws meet the requirements of section 2.3.5.a. as written.
Section 2.3.5.c.i. and iv. Regulatory mechanism that requires the use of sediment and erosion control practices at construction sites. Ordinance must include requirement for construction site operators to control other wastes on construction sites, such as demolition debris, litter, concrete truck wash-out, and chemicals.	Stormwater Rules and Regulations, Section 6, "Storm Water Management Plan" requires that erosion and sediment controls must be implemented to prevent impacts during disturbance and construction activities. Stormwater Rules and Regulations, Section 7, "Erosion and Sediment Control Plan" requires an Erosion and Sediment Control Plan that must be designed to properly manage on-site construction and waste materials, including concrete truck washout, chemicals, litter and sanitary waste. Inspections are conducted to certify that operators are adhering to the approved Erosion and Sediment Control Plan.	No changes are recommended. The current bylaws meet the requirements of section 2.3.5.c.i and iv. as written.

MS4 REGULATORY REVIEW – TOWN OF LYNNFIELD

Minimum Measure 4 (continued) – Construction Site Stormwater Runoff Control		
Required Elements	**Required Elements**	**Required Elements**
Section 2.3.5.c.ii. and v. Written procedures for site inspections and enforcement: • Inspection procedures. • Inspections to occur during and after BMP construction.	Stormwater Rules and Regulations, Section 9, "Inspection and Site Supervision" requires inspections certifying that the site is in compliance with the land disturbance permit. Inspections are required weekly or as specified in the permit, prior to and following anticipated storm events, and at specific construction milestones, including before and after construction is completed.	CEI recommends defining the Peer Reviewer/Town Technical Representative in Stormwater Management, Article II, Definitions. This definition should include their qualifications. It is also recommended that the Town develop a standardized inspection form to be included in the Stormwater Rules and Regulations and that these forms be submitted to the Town as they are completed.
• Who's responsible for inspecting. • Who has authority to implement enforcement.	This section designates the peer reviewer or applicant's technical representative as responsible for routine inspections. The Rules and Regulations authorize the Conservation Commission to enforce the regulations.	
• Inspector qualifications. • Statement that sanctions may be imposed.	Stormwater Management, Article II, Definitions defines the qualifications for the applicant's technical representative, but not the peer reviewer. It also outlines the sanctions that may be imposed.	The Town should develop procedures outside the regulations for tracking the number of site reviews, inspections, and enforcement actions.
• Using standard inspection form (if appropriate). • Procedures for tracking number of site reviews, inspections, and enforcement actions.	No standard inspection form is publicly available.	

MS4 REGULATORY REVIEW – TOWN OF LYNNFIELD

Minimum Measure 4 (continued) – Construction Site Stormwater Runoff Control		
Required Elements	**Current Municipal Regulatory Requirements**	**Recommended Changes**
Section 2.3.5.c.iii. Requirements for construction site runoff control programs to include BMPs. Program may reference state or Town BMP design standards.	Stormwater Rules and Regulations, Section 6 requires that projects meet the Standards of the Massachusetts Stormwater Management Policy, which requires BMP use during construction. Stormwater Rules and Regulations, Section 7 requires that the erosion and sediment controls be designed, installed, and maintained to good engineering practices and design requirements outlined in the regulations.	No changes are recommended. The current bylaws meet the requirements of section 2.3.5.c.iii. as written.
Section 2.3.5.c.v. Written procedures for site plan review: • Pre-construction review of the site design. • Procedures for the receipt and consideration of information submitted by the public.	Stormwater Rules and Regulations, Section 5, "Permits and Procedures" lays out the procedures for the site plan review, including requirements for the application and issuance of a permit prior to any site altering activity. A public hearing and notification of abutters is required.	CEI recommends adding additional language that encourages/requires the use of LID and GI.
• Planned construction site operations. • Planned BMPs during construction.	Stormwater Rules and Regulations, Section 7 requires submission and review of: • Planned construction site operations. • Planned BMPs during construction.	
• Planned BMPs to manage stormwater after development. • Consideration of water quality impacts.	Stormwater Rules and Regulations, Section 6 requires submission and review of: • Planned BMPs to manage stormwater after development. • Consideration of water quality impacts.	
• Evaluation of Low Impact Development (LID) and Green Infrastructure (GI) opportunities.	While many aspects of LID/GI are evaluated in the site plan review, procedures do not explicitly require the evaluation of LID/GI opportunities.	

Town of Lynnfield

RECORD OF ACTION AND CERTIFICATION OF ANNUAL TOWN MEETING SATURDAY, JUNE 12, 2021 10:00AM Lynnfield High School Gymnasium

ARTICLE 20. To see if the Town will vote to amend Chapter 213 of the General Bylaws, entitled "Stormwater Management," by deleting the text marked with ~~strike-throughs~~ and adding the underlined text as shown in the version of the said chapter that is on file with the Town Clerk, which amendments include minor editorial corrections and updated definitions; or to take any other action in connection therewith.

Non-Stormwater Discharges

§ 213-1 **Findings and purpose.**

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

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

C. The objectives of Article **I** are:

(1) To prevent pollutants from entering the Town's municipal storm drainage system (sometimes hereinafter referred to as the "MS4," an abbreviation for "municipal separate storm sewer system");

(2) To prohibit illicit connections and unauthorized discharges to the MS4;

(3) To require the removal of all such illicit connections;

(4) To comply with state and federal statutes and regulations relating to stormwater discharges; and

(5) To establish the legal authority to ensure compliance with the provisions of Article **I** through inspection, monitoring, and enforcement.

§ 213-2 **Definitions.**
As used in this article, the following terms shall have the meanings indicated:

AUTHORIZED ENFORCEMENT AUTHORITY
The Department of Public Works, its employees, officers, or agents are designated to enforce Article **I**, Non-Stormwater Discharges.

BYLAW
Refers to Chapter **213**, Stormwater Management, of the Town of Lynnfield Charter and Bylaws.

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

COMMONWEALTH
The Commonwealth of Massachusetts.

DISCHARGE OF POLLUTANTS
The addition from any source of any pollutant or combination of pollutants into the municipal storm drainage system or into the waters of the United States, the Commonwealth, or the Town of Lynnfield.

GROUNDWATER
Water beneath the surface of the ground.

ILLICIT CONNECTION
A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drainage 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 drainage system that is not composed entirely of stormwater, except as exempted in § **213-8**. The term does not include a discharge in compliance with a NPDES stormwater discharge permit or a surface water discharge permit, or resulting from fire-fighting activities exempted pursuant to § **213-8**.

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.

MS4

Municipal storm drainage system or municipal separate storm sewer system.

MUNICIPAL STORM DRAINAGE SYSTEM (MS4)

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.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGE PERMIT

A permit issued by United States Environmental Protection Agency (EPA) or jointly with the commonwealth that authorizes the discharge of pollutants to waters of the United States.

NON-STORMWATER DISCHARGE

Discharge to the municipal storm drainage system not composed entirely of stormwater.

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, the federal government, or the Town of Lynnfield to the extent permitted by law, and any officer, employee, or agent of such person.

POLLUTANT

Any element or property of sewage; agricultural, industrial or commercial waste; runoff; leachate; heated effluent; or other matter, whether originating at a point or nonpoint source, that is or may be introduced into any waters of the commonwealth, or the Town of Lynnfield. 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, 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.

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.

STORMWATER

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

SURFACE WATER DISCHARGE PERMIT

A permit issued by the Department of Environmental Protection (DEP) pursuant to 314 CMR 3.00 that authorizes the discharge of pollutants to waters of the commonwealth.

TOXIC OR HAZARDOUS MATERIAL OR WASTE

Any material which, because of its quantity, its concentration, or its 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 or 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.

WASTEWATER

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

WATERCOURSE

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

WATERS OF THE COMMONWEALTH

All waters within the jurisdiction of the commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, and groundwater.

WATERS OF THE TOWN OF LYNNFIELD

All waters within the jurisdiction of the Town of Lynnfield, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, and groundwater.

WETLANDS

Coastal and freshwater wetlands, including wet meadows, marshes, swamps, and bogs, as defined and determined pursuant to MGL c. 131, § 40, and 310 CMR 10.00 et seq.

§ 213-3 **Applicability.**

This Article **I** shall apply to flows entering the municipal storm drainage system.

§ 213-4 **Authority.**

This Article **I** is adopted under the authority granted by the Home Rule Amendment of the Massachusetts Constitution and the Home Rule Procedures Act, and pursuant to MGL c. 83, §§ 1, 10, and 16, and the regulations of the federal Clean Water Act found at 40 CFR 122.34

§ 213-5 **Administration.**

The authorized enforcement authority shall administer, implement and enforce this Article **I**, and any rules and regulations adopted thereunder. Any powers granted to or duties imposed upon the authorized enforcement authority may be delegated in writing by the authorized enforcement authority to employees or agents of the authorized enforcement authority.

§ 213-6 **Regulations.**

The authorized enforcement authority may promulgate rules and regulations to effectuate the purposes of this Article **I**. Failure by the authorized enforcement authority to promulgate such rules and regulations shall not have the effect of suspending or invalidating this Article **I**.

§ 213-7 **Prohibited activities.**

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

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

C. Obstruction of municipal storm drainage system. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drainage system without prior written approval from the authorized enforcement authority.

§ 213-8 **Exemptions.**

A. Any discharge or flow resulting from fire-fighting activities is exempt from the prohibitions

set forth herein.

B. The following non-stormwater discharges or flows are exempt from the prohibitions set forth herein, provided that the source is not a significant contributor of a pollutant to the municipal storm drainage system:

(1) Water line flushing;

(2) Flow from potable water sources;

(3) Springs;

(4) Natural flow from riparian habitats and wetlands;

(5) Diverted stream flow;

(6) Rising groundwater;

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

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

(9) Discharge from landscape irrigation or lawn watering;

(10) Water from individual residential car washing;

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

(12) Discharge from street sweeping;

(13) Dye testing, provided verbal notification is given to the authorized enforcement authority prior to the time of the test;

(14) Non-stormwater discharge permitted under a NPDES permit or a surface water discharge permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency or the Department of Environmental Protection, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and

(15) Discharge for which advanced written approval is received from the authorized enforcement

authority as necessary to protect the public health, safety or welfare or the environment.

§ 213-9 **Emergency suspension of municipal storm drainage system access.**
The authorized enforcement authority may suspend municipal storm drainage 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 or welfare or the environment. In the event any person fails to comply with an emergency suspension order, the authorized enforcement authority may take all reasonable steps to prevent or minimize harm to the public health, safety or welfare or the environment.

§ 213-10 **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, waters of the commonwealth or the waters of the Town of Lynnfield, 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 Fire and Police Departments, Board of Health, and the Department of Public Works. In the event of a release of nonhazardous material, the reporting person shall notify the authorized enforcement authority no later than the next business day. The reporting person shall provide to the authorized enforcement 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 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.

§ 213-11 **Enforcement.**
The Director of the Department of Public Works or his or her appointed designee shall enforce this Article **I** and all regulations, orders, violation notices, and enforcement orders issued thereunder and may pursue all civil and criminal remedies for such violations.

A. Civil relief. If a person violates the provisions of this Article **I**, or any regulation, permit, notice, or order issued thereunder, the authorized enforcement 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 authorized enforcement authority may issue a written order to enforce the provisions of this Article **I** or the regulations thereunder, which may include:

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

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

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

(d) Remediation of contamination in connection therewith.

(2) If the authorized enforcement authority 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 completion by the Town of 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 authorized enforcement 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 authorized enforcement 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 Article **I**, regulation, order or permit issued thereunder shall be punished as set forth in Chapter **58**, Penalties and Enforcement. 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 adopted by the Town as Chapter **58**, § **58-3**, of the General Bylaws, in which case the authorized enforcement authority of the Town shall be the enforcing person. The penalty for the first violation shall be a written warning. The penalty for the second violation shall be $50. The penalty for the third violation shall be ~~shall be~~ $100. The penalty for the fourth and subsequent offenses shall be $200. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

E. Entry to perform duties under this Article **I**. To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the authorized

enforcement authority and its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this bylaw and regulations thereunder and may make or cause to be made such examinations, surveys or samplings as the authorized enforcement authority deems reasonably necessary.

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

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

§ 213-12 **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
Construction and Post-Construction Stormwater Management for New Developments and Redevelopments

§ 213-13 **Findings and purpose.**

A. Regulation of discharges to the municipal storm drainage system (MS4) is necessary for the protection of the Town's water bodies and groundwater, and to safeguard the public health, safety and welfare and the environment. Increased and contaminated stormwater runoff associated with developed land uses and the accompanying increase in impervious surface are major causes of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater. In addition, land disturbances can cause harmful impacts due to:

(1) Soil erosion and sedimentation.

(2) Impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands, and groundwater.

(3) Contamination of drinking water supplies.

(4) Erosion of stream channels.

(5) Alteration or destruction of aquatic and wildlife habitat.

(6) Flooding.

(7) Overloading or clogging of municipal catch basins and municipal storm drainage systems.

B. Therefore, this Article **II** establishes stormwater management standards for the final conditions that result from development and redevelopment projects to minimize adverse impacts off site and downstream which would be borne by abutters, townspeople, and the general public. In addition, this Article **II** establishes stormwater management standards for land disturbances that have harmful impacts, including soil erosion and sedimentation.

C. The objectives of this Article **II** are:

(1) To require practices to control the flow of stormwater from new and redeveloped sites in order to prevent flooding and erosion;

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

(3) To promote groundwater recharge and infiltration;

(4) To prevent pollutants from entering the Town's municipal storm drainage system (MS4) and to minimize discharge of pollutants from the MS4;

(5) To ensure adequate long-term operation and maintenance of stormwater-related structures so that they work as designed;

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

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

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

(9) To comply with state and federal statutes and regulations relating to stormwater discharges; and

(10) To establish the Town's legal authority to ensure compliance with the provisions of this article.

§ 213-14 **Definitions.**
As used in this article, the following terms shall have the meanings indicated:

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

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 in 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 stormwater management permit for proposed land disturbances.

APPLICANT'S TECHNICAL REPRESENTATIVE

A registered professional engineer (P.E.) hired by the applicant to certify that design and construction are completed in accordance with the applicable local, state, and federal stormwater requirements.

AUTHORIZED ENFORCEMENT AUTHORITY

The Town's authorized agent to enforce construction and post-construction runoff controls as specified in this Article **II** and the stormwater management rules and regulations. The Conservation Commission is designated as the authorized enforcement authority.

BEST MANAGEMENT PRACTICE (BMP)

An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

BYLAW

Refers to Chapter **213**, Stormwater Management, of the Town of Lynnfield Charter and Bylaws.

CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)

A certified specialist in soil erosion and sediment control. This certification program, sponsored by the Soil and Water Conservation Society in cooperation with the American Society of Agronomy, provides the public with evidence of professional qualifications.

CLEAN WATER ACT

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

CLEARING

Any activity that removes the vegetative surface cover.

COMMONWEALTH

The Commonwealth of Massachusetts.

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 drainage system or into the waters of the United States, the commonwealth, or the Town of Lynnfield.

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 SEDIMENT CONTROL PLAN

A document containing narrative, drawings, and details developed by a registered professional engineer (P.E.) or a certified professional in erosion and sediment control (CPESC), which includes BMPs or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction-related land disturbances. The plan is required as part of the application for a stormwater management permit.

GRADING

Changing the level or shape of the ground surface.

IMPERVIOUS SURFACE

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

LAND DISTURBANCE

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

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS~~POLICY~~

The Stormwater Standards as further defined by the Massachusetts Stormwater Handbook both issued by the Department of Environmental Protection, and as amended, ~~policy issued by the Department of Environmental Protection (DEP), and as amended,~~ that coordinate~~s~~ the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act, MGL c. 131, § 40, and Massachusetts Clean Waters Act, MGL c. 21, §§ 23 through 56. The ~~policy~~ Standards address~~es~~ 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.

MS4

Municipal storm drainage system or municipal separate storm sewer system.

MUNICIPAL STORM DRAINAGE SYSTEM (MS4)

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.

NEW DEVELOPMENT

Any construction activities or land alteration resulting in total earth disturbances equal to or greater than 1 acre (or activities that are part of a larger common plan of development disturbing greater than 1 acre) on an area that has not previously been developed to include impervious cover.

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.

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, the federal government, or the Town of Lynnfield, to the extent permitted by law, and any officer, employee, or agent of such person.

POINT SOURCE

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

POLLUTANT

Any element or property of sewage; agricultural, industrial or commercial waste; runoff; leachate; heated effluent; or other matter whether originating at a point or non-point source, that is or may be introduced into any sewage treatment works or waters of the commonwealth or the Town of Lynnfield. 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, 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.

PRE-CONSTRUCTION

All activity in preparation for construction.

RECHARGE

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

REDEVELOPMENT

Any construction, land alteration, or improvement of impervious surfaces resulting in total earth disturbances equal to or greater than 1 acre (or activities that are part of a larger common plan of development disturbing greater than 1 acre) that does not meet the definition of new development.~~Development, rehabilitation, expansion, demolition, or phased projects that disturb the ground surface or increase the impervious area on previously developed sites.~~

RUNOFF

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

SEDIMENT

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

SEDIMENTATION

The process or act of deposition of sediment.

SITE

Any lot or parcel of land or area of property where land disturbances are, were, or will be performed.

SOIL

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

STORMWATER

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

STORMWATER MANAGEMENT PLAN

A plan required as part of the application for a stormwater management permit.

STREAM

A body of running water, including brooks, creeks, and other watercourses, which moves in a definite channel in the ground due to a hydraulic gradient. A portion of a stream may flow through a culvert, be naturally obscured, or run beneath a bridge. A stream's flow may be intermittent (i.e., does not flow throughout the year) or perennial.

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.

WATERS OF THE TOWN OF LYNNFIELD

All waters within the jurisdiction of the Town of Lynnfield, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters, and groundwater.

WETLANDS

Coastal and freshwater wetlands, including wet meadows, marshes, swamps, and bogs, as defined and determined pursuant to MGL c. 131, § 40, and 310 CMR 10.00 et seq.

§ 213-15 **Authority.**

This bylaw is adopted under authority granted by the Home Rule Amendment of the Massachusetts Constitution, the Home Rule statutes, and pursuant to MGL c. 83, §§ 1, 10, and 16, and the regulations of the federal Clean Water Act found at 40 CFR 122.34.

§ 213-16 **Applicability.**

A. No person may undertake a construction activity, including clearing, grading, and excavation, that results in a land disturbance that will disturb an acre of land or more or will disturb less than one acre of land but is part of a larger common plan of development or sale that will ultimately disturb an acre of land or more draining to the Town's MS4 without a stormwater management permit from the authorized enforcement authority. After the initial common plan construction activity is completed for a particular parcel, any subsequent development or redevelopment of that parcel would be regarded as a new plan of development. For example, after a house is built and occupied, any future construction on that lot (e.g., reconstructing after fire, adding a pool or parking area, etc.) would stand alone as a new common plan for purposes of calculating acreage disturbed to determine if a stormwater management permit is required. Construction activity does not include routine

maintenance that is performed to maintain the original line and grade, hydraulic capacity, or purpose of the site.

B. Exemptions. The following are exempt from the provisions of this Article **II**:

(1) Construction activities waived from permit coverage under the NPDES General Permit for Stormwater Discharges from Construction Activities;

(2) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulations, 310 CMR 10.04;

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

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

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

(6) ~~As authorized in the Phase II Small MS4 General Permit for Massachusetts, s~~Stormwater discharges resulting from the activities identified in this Article **II** that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Stormwater Management ~~Policy~~ Handbook and complies with these rules and regulations as reflected in an order of conditions issued by the Conservation Commission; and

(~~7~~6) Stormwater discharges resulting from the development or construction relating to any project, or portion thereof, that has received any of the following:

(a) ~~Site plan approval or s~~Subdivision approval ~~or a special permit~~ from the Planning Board~~, or a Green Belt special permit from the Zoning Board of Appeals under § 260-8.4 of the Zoning Bylaws~~; and

(b) Emergency work to protect life, limb, or property.

§ 213-17 **Administration.**

A. The authorized enforcement authority shall administer, implement, and enforce this Article **II**. Any powers granted to or duties imposed upon the authorized enforcement authority may be delegated in writing by the authorized enforcement authority to its employees and agents.

B. Rules and regulations. The authorized enforcement authority may adopt, and periodically

amend, rules and regulations relating to the procedures and administration of this Article **II** after public notice and public hearing. Failure by the authorized enforcement authority to promulgate such rules and regulations or a legal declaration of their invalidity by a court of law shall not act to suspend or invalidate the effect of this Article **II**.

§ 213-18 **Permits and procedures.**
Permits and procedures shall be defined and included as part of any rules and regulations promulgated as permitted in this Article **II**.

§ 213-19 **Fees.**
A. Application and review fee.

(1) The authorized enforcement authority shall collect with each submission an application and review fee to cover expenses connected with the review of the application for stormwater management permit. The fee shall be as set from time to time by the authorized enforcement authority.

(2) The applicant must hire a registered professional engineer (P.E.) to certify that the plans are in accordance with the Town's standards. The authorized enforcement authority is authorized to retain professional outside consultants to review the plans and to advise the authorized enforcement authority concerning them, and to apply funds paid by the applicant for the application and review fee to defray the cost of hiring such consultants. All unused funds remaining from this fee after approval or denial of the application shall be returned to the applicant.

B. Inspection fee.

(1) The authorized enforcement authority shall collect an inspection review fee to cover expenses connected with the inspection of the applicant's compliance with the Stormwater management permit. The fee shall be in an amount as set from time to time by the authorized enforcement authority.

(2) The purpose of this fee is to cover all professional inspection costs from the time of the beginning of construction until the certificate of completion has been issued. The authorized enforcement authority is authorized to retain professional outside consultants to inspect the work and to advise the authorized enforcement authority concerning the same, and to apply funds paid by the applicant for the inspection fee to defray the cost of hiring such consultants.

(3) The inspection fee shall be paid by the applicant prior to any construction activity. All unused funds remaining from this fee after completion of the project shall be returned to the applicant.

MOTION made by Select Board member Philip Crawford that the Town vote to amend Chapter 213 of the General Bylaws, entitled "Stormwater Management," by deleting the text marked with strike-throughs and adding the underlined text as shown in the version of the said chapter that is on file with the Town Clerk, which amendments include minor editorial corrections and updated definitions.

MAJORITY VOTE REQUIRED

The Finance Committee, the Select Board, and the Planning Board all recommend this Article.

ACTION: It was moved and seconded. Following a brief debate there was a motion to move the question which carried by voice vote. The main motion carried by voice vote.

ATTEST: _____

Linda A. Emerson, CMC
Town Clerk

STORMWATER RULES AND REGULATIONS

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SECTION 1. PURPOSE

The purpose of these Rules and Regulations is to address discharges to the municipal separate storm sewer system (MS4) that is necessary for the protection of the Town's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment. Increased and contaminated storm water runoff associated with developed land and the accompanying increase in impervious surface area are major causes of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater. In addition, land disturbances can cause harmful impacts due to soil erosion and sedimentation as more specifically addressed in Chapter 213 Stormwater Management Bylaw of the Town's General Bylaws.

SECTION 2. DEFINITIONS

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

AGRICULTURE: The normal maintenance or improvement of land in agricultural or aqua-cultural 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 Stormwater Management permit for proposed land-disturbance activity.

AUTHORIZED ENFORCEMENT AUTHORITY: The Town's authorized agent to enforce Article II of the Stormwater Management Bylaw and these rules and regulations. The Conservation Commission, and its employees or agents are designated as the authorized enforcement authority.

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

CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC): This certification program, sponsored by the Soil and Water Conservation Society in cooperation with the American Society of Agronomy, provides the public with evidence of professional qualifications.

CLEARING: Any activity that removes the vegetative surface cover.

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

CLEARING: Any activity that removes the vegetative surface cover.

COMMISSION: The Conservation Commission.

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

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

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

EROSION AND SEDIMENTATION CONTROL PLAN: A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a Certified Professional in Erosion and 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.

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).

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

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

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 roof tops.

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

MASSACHUSETTS ENDANGERED SPECIES ACT: (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 STORM DRAIN SYSTEM (MS4): 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 Lynnfield.

NEW DEVELOPMENT: Any construction activities or land alteration resulting in total earth disturbances equal to or greater than 1 acre (or activities that are part of a larger common plan of development disturbing greater than 1 acre) on an area that has not previously been developed to include impervious cover.

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 ensure that it continues to function as designed.

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.

OUTFALL: The point at which stormwater flows out from a point source into waters of the Commonwealth.

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.

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

REDEVELOPMENT: Any construction, land alteration, or improvement of impervious surfaces resulting in total earth disturbances equal to or greater than 1 acre (or activities that are part of a

larger common plan of development disturbing greater than 1 acre) that does not meet the definition of new development.

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: Stormwater runoff, snow melt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan required as part of the application for a Stormwater Management Permit. See Chapter 213, Article II.

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

TSS: Total Suspended Solids**.**

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

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

WETLAND RESOURCE AREA: Areas specified in the Massachusetts Wetlands Protection Act G.L. c. 131, § 40 and in any wetland bylaw adopted by the Town of Lynnfield.

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. ENFORCEMENT AUTHORITY AND ADMININISTRATION

The Conservation Commission, its employees, officers, or agents are designated to enforce these Rules and Regulations under Chapter 213, Article II.

Town Boards, including, but not limited to the Planning Board, and Zoning Board of Appeals, who have formally adopted these regulations, either directly, or by reference, and who issue permits and/or approvals for projects and/or activities under their specific jurisdiction and in accordance with their specific jurisdictional requirements regarding public notice, hearings and actions shall have approval authority under these Stormwater Regulations. Projects or activities approved by these Boards shall be deemed in compliance with the intent and provisions of these Regulations.

SECTION 4. APPLICABILITY

These Rules and Regulations apply to all activities in accordance with the Town of Lynnfield's General Bylaws, Chapter 213, Article II that states that "No person may undertake a construction activity, including clearing, grading, and excavation that resu1ts in a land disturbance that will disturb an acre of land or more or will disturb less than one acre of land but is part of a larger common plan of development or sale that will u1timately disturb an acre of land or more draining to the Town's MS4 without a Stormwater Management Permit from the Authorized Enforcement Authority."

Exemptions include all of the activities stated in the Town of Lynnfield's General Bylaws Chapter 213, Article II Section D. Those activities are:

1) Construction activities waived from permit coverage under the NPDES General Permit for Stormwater Discharges from Construction Activities;
2) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulations, 310 CMR 10.04;
3) Maintenance of existing landscaping, gardens or lawn areas associated with a single family dwelling;
4) The construction of fencing that will not substantially alter existing terrain or drainage patterns;
5) Construction of utilities other than drainage (e.g., gas, water, electric, telephone, etc.) which will not alter terrain or drainage patterns;
6) Stormwater discharges resulting from the activities identified in Chapter 213, Section II that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Stormwater Management Handbook and complies with these rules and regulations as reflected in an Order of Conditions issued by the Conservation Commission; and
7) Stormwater discharges resulting from the development or construction relating to any project, or portion thereof, that has received any of the following:
    a. Subdivision Approval from the Planning Board; or
    b. Emergency work to protect life, limb, or property.

SECTION 5. PERMITS AND PROCEDURES

A. Filing Application. The site owner shall file with the Conservation Commission a completed application package for a Stormwater Management Permit (SMP). Permit issuance is required prior to any site altering activity. While the applicant can be a representative, the permittee must be the owner of the site. The SMP Application package must be hand delivered or sent certified mail, return receipt requested to the Conservation Commission and shall include:

1. a completed application form with original signatures of all owners plus ten (10) copies thereof;
2. one (1) copy of an abutters' list, certified by the Assessors' Office;
3. ten (10) copies of the Stormwater Management Plan and project description as specified in Section 6 of these Rules and Regulations;
4. ten (10) copies of the Erosion and Sediment Control Plan as required by Section 7 of these Rules and Regulations;
5. ten (10) copies of the Operation and Maintenance Plan as required by Section 8 of these Rules and Regulations;
6. payment of the application and review fees; and
7. provide notification to the owners of any property within 100 feet of the property line of the land where the activity is proposed, including across a public or private street. The applicant shall provide notification at the mailing addresses as certified by the assessors' office on a form supplied by the Conservation Commission Administrator. Notification shall be at the applicant's expense. The notification shall state where copies of the application or request, with plans, may be examined and copied and where information on the date, time and location of the public hearing may be obtained. The applicant shall notify abutters by certified mail, return receipt requested, or by certificates of mailing. Mailing at least seven (7) days prior to the public hearing shall constitute timely notice. The applicant shall present either the certified mail receipts or certificate of mailing receipts for all abutters at the beginning of the public hearing.

B. Public Hearing. The date of receipt by the Conservation Commission Administrator shall be the date on which the application is deemed filed. The Commission shall conduct a public hearing on any Stormwater Permit Application with written notice given at the expense of the applicant, at least five business days prior to the hearing, in a newspaper of general circulation in the municipality.

The Commission shall commence the public hearing within 21 days from receipt of a completed permit application unless an extension is authorized in writing by the applicant. The Commission shall have authority to continue the hearing to a specific date announced at the hearing for reasons stated at the hearing which may include the need for additional information from the applicant or others deemed necessary by the Commission in its discretion. The Commission shall issue its permit in writing within 21 days of the close of the public hearing thereon unless an extension is authorized in writing by the applicant.

C. Entry. Filing an application for a permit grants the Authorized Enforcement Authority, or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with the resulting permit. Other Boards. The Authorized Enforcement Authority

shall notify the Town Clerk of receipt of the application, and shall give one copy of the application package to Planning Board, Board of Health or others as appropriate or required by the Board.

D. Fee Structure. The Authorized Enforcement Authority shall obtain with each submission an Application Fee established in Chapter 213, Article II of the Town's General Bylaws. The Authorized Enforcement Authority is authorized to retain a Registered Professional Engineer or other professional consultant to advise the Authority on any or all aspects of these plans. Applicants must pay review fees before the review process may begin.

E. Actions. The Authorized Enforcement Authority's action, rendered in writing, shall consist of either:
   1. Approval of the Stormwater Management Permit Application based upon determination that the Stormwater Management Plan, Erosion and Sediment Control Plan, and Operation and Maintenance Plan meet the requirements and standards herein, and will adequately protect the water resources of the community and is in compliance with the requirements set forth in these Rules and Regulations;
   2. Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Authority which will ensure that the project meets the requirements and standards herein and adequately protect water resources, set forth in these Rules and Regulations;
   3. Disapproval of the Stormwater Management Permit Application based upon a determination that the proposed Stormwater Management Plan, Erosion and Sediment Control Plan, and Operation and Maintenance Plan as submitted, do not meet the requirements and standards herein or adequately protect water resources, as set forth in these Rules and Regulations.

F. Failure of the Authorized Enforcement Authority to take final action upon an Application within the time specified above shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without Authority action, the Authority must issue a Stormwater Management Permit.

G. Plan Changes. The permittee must notify the Authorized Enforcement Authority in writing of any drainage change or alteration in the system authorized in a Stormwater Management Permit before any change or alteration is made. If the Authorized Enforcement Authority determines that the change or alteration is significant, based on the Stormwater Management requirements herein and accepted construction practices, the Authority may require that an amended application be filed and a public hearing.

H. Project Completion. At completion of the project the permittee shall submit as-built record drawings of all structural stormwater controls and treatment best management practices required for the site. The as-built drawing shall show deviations from the approved plans, if any, and be certified by a Registered Professional Engineer.

I. A Stormwater Management Permit shall expire three (3) years from the date of issuance. Any permit may be renewed once for an additional one-year period, provided that a request for renewal is received in writing to the Authorized Enforcement Authority at least thirty (30) days prior to expiration.

SECTION 6. STORMWATER MANAGEMENT PLAN

A. Plan.

The application for a Stormwater Management permit shall consist of submittal of a Stormwater Management Plan to the Authorized Enforcement Authority. This Stormwater Management Plan shall contain sufficient information for the Authority to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the applicant for reducing adverse impacts from stormwater. The Plan shall be designed to meet the Standards as set forth in Part B of this section and the Massachusetts DEP Stormwater Management Handbook Volumes 1 and 2, as amended. The Stormwater Management Plan shall fully describe the project in drawings and narrative. It shall include:

1. A locus map,
2. The existing zoning, and land use at the site,
3. The proposed land use,
4. The location(s) of existing and proposed easements,
5. The location of existing and proposed utilities,
6. The site's existing & proposed topography with contours at 1-foot or -2foot intervals with additional spot grades as needed to depict detailed drainage patterns,
7. A description & delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows,
8. A delineation of 100-year flood plains, if applicable,
9. The existing site hydrology,
    a. A drainage area map showing pre-construction watershed boundaries, drainage area and stormwater flow paths,
    b. The existing vegetation and ground surfaces with runoff coefficients for each,
    c. Runoff calculations utilizing Natural Resource Conservation Service (NRCS) methods
10. The proposed site hydrology,
    a. A drainage area map showing post construction watershed boundaries, drainage area and stormwater flow paths,
    b. The proposed vegetation and ground surfaces with runoff coefficients for each,
    c. Runoff calculations utilizing Natural Resource Conservation Service (NRCS) methods,
    d. Soil conditions and depth to ground water in a minimum of two locations within the proposed stormwater facilities.
    e. Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization,
    f. All measures for the detention, retention or infiltration of water,
    g. All measures for the protection of water quality including total suspended solid (TSS) and phosphorus removal rates and supporting calculations,
    h. The structural details for all components of the proposed drainage systems and stormwater management facilities,
    i. Notes on drawings specifying materials to be used, construction specifications, and typicals,
    j. Necessary infiltration calculations for these facilities is required;
11. Evaluation of opportunities for using Low Impact Development (LID) and green

infrastructure techniques and BMPs;
12. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable,
13. Timing, schedules, and sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization,
14. A maintenance schedule for the period of construction, and
15. Any other information requested by the Authorized Enforcement Authority.

B. Performance Standards. Projects shall meet the following standards:

1. Low Impact Development (LID) site planning and design strategies must be implemented unless infeasible in order to reduce the discharge of stormwater from development sites.
2. Stormwater management systems design shall be consistent with, or more stringent than, the requirements of the latest edition of the Massachusetts Stormwater Handbook.
3. Capacity of drainage systems shall be designed to handle all stormwater runoff from the site including run-off generated from the 100-year storm event using the following methods:
   a. All piping and grate inlets shall be designed to handle flow up to a 25-year 24-hr storm event;
   b. Detention facilities shall be designed to accommodate all run-off generated by the 100-yr, 24-hr storm.
   c. Culverts shall be designed to accommodate the 50-yr, 24-hr storm.
4. Drainage pipe systems shall be designed to provide self-cleaning flow velocities.
5. An emergency overflow shall be provided to all detention/retention facilities in the event of a storm in excess of the 100-year, 24-hr storm.
6. Stormwater discharge to the Town's drainage system may be permitted if the Applicant can demonstrate that the proposed flow during a 25-yr, 24-hr storm event can adequately handle the increased flow.
7. Stormwater management systems for ***new developments*** shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of TSS AND 60% of the average annual load of Total Phosphorus (TP) related to the total post-construction impervious area on the site as achieved through one of the following methods:
   a. Installing BMPs that meet the pollutant removal percentages. Pollutant removal shall be determined as required in Section 6.B.9 below; or
   b. Retaining the volume of runoff equivalent to, or greater than one (1.0) inch multiplied by the total post-construction impervious surface area on the new development site; or
   c. Meeting a combination of retention and treatment that achieves the above standards; or
   d. Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the new development site.
8. Stormwater management systems for ***redevelopments*** shall be designed to meet an average annual pollutant removal equivalent to 80% of the average annual post-construction load of TSS AND 50% of the average annual load of TP related to the total post-construction impervious area on the site as achieved through one of the following methods:
   a. Installing BMPs that meet the pollutant removal percentages. Pollutant removal shall be determined as required in Section 6.B.9 below; or
   b. Retaining the volume of runoff equivalent to, or greater than, 0.8 inch multiplied by the total post-construction impervious surface area on the redeveloped site; or

c. Meeting a combination of retention and treatment that achieves the above standards; or
d. Utilizing offsite mitigation that meets the above standards within the same USGS HUC10 as the redevelopment site.
e. Redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways, (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects) shall improve existing conditions unless infeasible and are exempt from Section 6.B.8.a. through 8d. above. Roadway widening or improvements that increase the amount of impervious area on the redevelopment site by greater than or equal to a single lane width shall meet the requirements of Section 6.B.8.a. through 8d. fully.

9. In complying with Sections 6.B.7 and 6.B.8 above, the required removal percentage is not required for each storm; it is the average removal over a year that is required. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) (https://www.epa.gov/npdes-permits/stormwater-tools-new-england)or other BMP performance evaluation tool provided by EPA Region 1 where available. If EPA Region 1 tools do not address the planned or installed BMP performance any federally or State approved BMP design guidance or performance standards (e.g. State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance.
10. For new development and redevelopment projects with discharges to water bodies or their tributaries subject to one or more approved Total Maximum Daily Load (TMDL) or listed as Category 4b or 5 in the current Massachusetts Integrated List of Waters listed pursuant to the Federal Clean Water Act Sections 303(d) and 305(b) without an EPA approved TMDL:
    a. Structural and non-structural stormwater management best management practices (BMPs) shall be consistent with each such TMDL.
    b. Nitrogen Impairments: Stormwater management BMPs shall be optimized for nitrogen removal.
    c. Phosphorus Impairments: Stormwater management BMPs shall be optimized for phosphorus removal.
    d. Chloride Impairments: The applicant shall include measures in the required Operation and Maintenance (O&M) Plan to minimize salt usage or use alternative deicing materials and practices. The applicant shall consult with the Lynnfield Department of Public Works to develop these O&M provisions.
    e. Solids, Metals, or Oil and Grease Impairments: Stormwater management systems designed on commercial or industrial land use areas shall be designed to:
        (a) allow shutdown and containment in the event of an emergency spill or other unexpected event;
        (b) infiltrate stormwater shall provide the level of pollutant removal equal to or greater than the level of pollutant removal provided through the use of biofiltration of the same volume of runoff to be infiltrated, prior to infiltration.

C. Project Changes

The permittee, or its agent, shall notify the Authorized Enforcement Authority in writing of any change or alteration of a land-disturbing activity authorized in a Stormwater Management Permit before any change or alteration occurs. If the Authority determines that the change or alteration is significant, based on the design requirements listed in this section and accepted construction

practices, the Authority may require that an amended Stormwater Management Permit application be filed and a public hearing held. If any change or deviation from the Stormwater Management Permit occurs during a project, the Authority may require the installation of interim measures before approving the change.

SECTION 7. EROSION AND SEDIMENT CONTROL PLAN

A. Plan. The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed below. The Erosion and Sediment Control Plan shall include:

1. Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan;
2. Title, date, north arrow, names of abutters, scale, legend, and locus map;
3. Location and description of natural features including:
    a. Watercourses and water bodies, wetland resource areas and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a Professional Engineer for areas not assessed on these maps;
    b. Existing vegetation including tree lines, canopy layer, shrub layer, and ground cover, and trees with a caliper of twelve (12) inches or larger, noting specimen trees and forest communities; and
    c. Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity;
4. Lines of existing abutting streets showing drainage and driveway locations and curb cuts;
5. The nature of existing soils, and the volume and nature of imported soil materials;
6. Topographical features including existing and proposed contours at intervals no greater than two (2) feet with spot elevations provided when needed;
7. Surveyed property lines showing distances and monument locations, all existing and proposed easements, rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed;
8. Drainage patterns and approximate slopes anticipated after major grading activities (Construction Phase Grading Plans);
9. Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading, and material stockpiling areas;
10. Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable;
11. Location and description of industrial discharges, including stormwater discharges from dedicated asphalt plants and dedicated concrete plants, which are covered by this permit;
12. Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures;
13. A description of construction and waste materials expected to be stored on-site, meeting specifications of the designated storage area for such material. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;
14. A description of provisions for phasing the project;

15. Plans must be stamped and certified by a qualified Professional Engineer registered in Massachusetts or a Certified Professional in Erosion and Sediment Control; and
16. Such other information as is required by the Authorized Enforcement Authority by regulation or order.

B. Design Requirements
1. Minimize total area of disturbance;
2. Sequence activities to minimize simultaneous areas of disturbance;
3. Minimize peak rate of runoff in accordance with the Massachusetts Stormwater Handbook;
4. Minimize soil erosion and control sedimentation during construction, provided that prevention of erosion is preferred over sedimentation control;
5. Divert uncontaminated water around disturbed areas;
6. Maximize groundwater recharge;
7. Install and maintain all erosion and sediment control measures in accordance with the manufacturers' specifications and good engineering practices;
8. Use perimeter controls at the site and prevent off-site transport of sediment;
9. Stabilize construction site entrances and exits to prevent off-site tracking;
10. Protect and manage on and off-site material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project);
11. Comply with applicable federal, state and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control;
12. Prevent significant alteration of habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or Of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species from the proposed activities;
13. Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site;
14. Properly manage on-site construction and waste materials. Control wastes that may be discharged, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes (these wastes may not be discharged to the MS4);
15. Protect slopes;
16. Protect all storm drain inlets and armor all newly constructed outlets;
17. Prevent off-site vehicle tracking of sediments; and
18. Inspect stormwater controls at consistent intervals.

C. Project Changes

The permittee, or its agent, shall notify the Authority in writing of any change or alteration of a land-disturbing activity authorized in a Stormwater Management Permit before any change or alteration occurs. If the Authorized Enforcement Authority determines that the change or alteration is significant, based on the design requirements listed in this section and accepted construction practices, the Authority may require that an amended Stormwater Management Permit application be filed and a public hearing held. If any change or deviation from the Stormwater Management Permit

occurs during a project, the Authority may require the installation of interim measures before approving the change.

SECTION 8. OPERATION AND MAINTENANCE PLANS

A. A stand-alone Operation and Maintenance Plan (O&M Plan) is required at the time of application for all projects. The maintenance plan shall be designed to ensure compliance with the permit and these regulations. The Authorized Enforcement Authority shall make the final decision of what maintenance option is appropriate in a given situation. The Authority will consider natural features, proximity of site to water bodies and wetlands, extent of impervious surfaces, size of the site, the types of stormwater management structures, and potential need for ongoing maintenance activities when making this decision. The Operation and Maintenance Plan shall remain on file with the Authority and shall be an ongoing requirement. The O&M Plan shall include:

1. The name(s) of the owner(s) for all components of the system
2. Maintenance agreements that specify:
   a. The names and addresses of the person(s) responsible for operation and maintenance.
   b. The person(s) responsible for financing maintenance and emergency repairs.
   c. A maintenance schedule for all drainage structures, including swales and ponds.
   d. Map showing locations of all storm water facilities including but not limited to catch basins, manholes, drainage piping, and storm water devices.
   e. A list of easements with the purpose and location of each.
   f. Estimated operation budget.
   g. The signature(s) of the owner(s).

B. Stormwater Management Easement(s).
1. Stormwater management easements shall be provided by the property owner(s) as necessary for:
   a. access for facility inspections and maintenance,
   b. preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event.
   c. direct maintenance access by heavy equipment to structures requiring regular cleanout.
2. The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
3. Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Authorized Enforcement Authority.
4. Easements shall be recorded with the Essex County Registry of Deeds prior to issuance of a Certificate of Completion by the Authorized Enforcement Authority.
5.

C. Responsibility for maintenance shall not be assigned or transferred to the Owner or tenant of an individual property in a residential development or project, unless such Owner or tenant owns or leases the entire residential development or project.

D. If the person responsible for maintenance identified under Section 8.A.2 above is not a public agency, the operation and maintenance and any future revisions based on Section 8.H below shall be recorded upon the deed of record for each property on which the maintenance described

in the Operation and Maintenance Plan must be undertaken.

E. Preventative and corrective maintenance shall be performed to maintain the function of storm water management measures, including repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of non-vegetated linings.

F. The person responsible for maintenance identified under Section 8.A.2 above shall maintain a detailed log of all preventive and corrective maintenance activities for the last three years including inspections, repair, replacement, and disposal (the log shall indicate the type of material and the disposal location).

G. The person responsible for maintenance identified under Section 8.A.2 above shall retain and make available, upon request by any public entity with administrative, health, environmental, or safety authority over the site, the Operation and Maintenance Plan and documentation required by Section 8.F.

H. Changes to Operation and Maintenance Plans

1. The owner(s) of the stormwater management system must notify the Authorized Enforcement Authority of changes in ownership or assignment of financial responsibility.
2. The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of these regulations by mutual agreement of the Authorized Enforcement Authority and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational responsibility.\

I. The Owner is required to obtain an annual certification from a Registered Professional Engineer (P.E.) that maintenance is being performed on structural best management practices (BMPs). The annual certification must be submitted to the Town with required administrative forms and an Operations and Maintenance fee.

J. Waivers

1. The Town shall perform operation and maintenance of structural best management practices (BMPs) for public facilities only.
2. The Town is waived of submitting an Operation and Maintenance Plan.

SECTION 9. INSPECTION AND SITE SUPERVISION

A. Pre-construction Meeting. Prior to starting clearing, excavation, construction, or land disturbing activity the applicant, the applicant's representative, the general contractor or any other person with authority to make changes to the project, shall meet with the Authorized Enforcement Authority, to review the permitted plans and their implementation.

B. Peer Reviewer or Technical Representative Inspection. The Peer Reviewer or Technical Representative shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the Authorized Enforcement Authority wherein the work fails to comply with the land disturbance permit as approved. The permit and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Authorized Enforcement Authority, shall be maintained at the site during the progress of the work. In order to obtain inspections, the Applicant shall notify the Authority at least two (2) working days before each of the following events:

1. Erosion and sediment control measures are in place and stabilized;
2. Site clearing has been substantially completed;
3. Rough grading has been substantially completed;
4. Final grading has been substantially completed;
5. Close of the construction season; and
6. Final landscaping (permanent stabilization) and project final completion.

C. Applicant Inspections. The applicant or his/her agent shall conduct and document inspections of all control measures no less than weekly or as specified in the permit, and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the control plan, and the need for maintenance or additional control measures. The applicant or his/her agent shall submit monthly reports to the Authorized Enforcement Authority in a format approved by the Authority.

D. Utility Inspection. Prior to backfilling of any underground drainage or storm water conveyance structure, the applicant shall request an inspection from the Town's Technical Representative 24 hours prior to the beginning of such work.

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

SECTION 10. WAIVERS

A. The Enforcement Authority may waive strict compliance with any requirement of Chapter 213, Article II or the ru1es and regulations promulgated hereunder, where:
   1. Such action is allowed by federal, state and local statutes and/or regulations
   2. Is in the public interest, and
   3. Is not inconsistent with the purpose and intent of Chapter 213, Article II.

B. Any applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of Chapter 213, Article II does not further the purposes or objectives of Chapter 213, Article II.

C. All waiver requests shall be reviewed by the Enforcement Authority and if necessary, discussed with other Town departments.

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

SECTION 11. FINAL REPORT

Upon completion of the work, the permittee shall submit a report (including certified as-built construction plans) from a Professional Engineer (P.E.) or Professional Land Surveyor (P.L.S) certifying that:

1. All erosion and sediment control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved permit.
2. All stormwater best management practices (BMPs) have been installed according to the stormwater management plan.
3. Any discrepancies from the approved permit should be noted in the cover letter.

SECTION 12. CERIFICATE OF COMPLETION

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

SECTION 13. ENFORCEMENT

The Conservation Commission or an authorized agent shall enforce these rules and regulations, the Stormwater Management Bylaw, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations. The provisions are detailed in Chapter 213, Article II Stormwater Management Bylaw of the Town's Charter and Bylaws.

SECTION 14. SEVERABILITY

If any provision, paragraph, sentence, or clause of these rules and regulations shall be held invalid for any reason, all other provisions shall continue in full force and effect.

SECTION 15. RIGHT TO AMEND RULES AND REGULATIONS

The Town reserves the right to amend these Rules and Regulations and to establish more stringent limitations or requirements as are deemed necessary and appropriate.

The Authorized Enforcement Authority may adopt, and periodically amend, the Rules and Regulations after public notice and public hearing. Failure by the Authorized Enforcement Authority to promu1gate such ru1es and regulations or a legal declaration of their invalidity by a court of law shall not act to suspend or invalidate the effect of Chapter 213, Section II of Lynnfield Town Bylaws.

APPENDIX A. STORMWATER PERMIT APPLICATION

To: Lynnfield Conservation Commission
55 Summer Street
Lynnfield, MA 01940
(781) 334-9495

The undersigned hereby submits a Stormwater Management Permit Application as defined in the Town of Lynnfield Charter and Bylaws, Chapter 213 - Stormwater Management Bylaw and requests a review and determination by the Authorized Enforcement Authority of the enclosed Stormwater Management Plan, Erosion and Sediment Control Plan, and Operation and Maintenance Plan. The applicant hereby authorizes the Authorized Enforcement Authority and/or its designees to inspect the property described below from time to time for the purpose of establishing compliance with any permit or order of the Authorized Enforcement Authority, pursuant to the said bylaw.

The Stormwater Management Permit involves property where owner's title to the land is derived under deed for _____, dated_____, and recorded in the Essex County Registry of Deeds, Book _____, Page_____, or Land Court Certificate of Title No., Registered in _____ District, Book _____, Page _____.

Give a brief summary of the nature of the project.

Total Parcel Size: _____s. f. Proposed Area of Disturbance _____s. f.

The property (building) is described as being located at _____, Lynnfield, MA;
it is currently used as _____, and the changes proposed to be made are _____.

The project is located on the parcel shown on Lynnfield Assessors Map ___, Parcel _____.

Applicant's Signature _____ Owner's Signature(s)_____
(if different than Applicant)
Applicant's Name (print) _____ Owner's Names(s) _____

Applicant's Address _____ Owner's Address _____
_____ _____

Date Received by Conservation Commission Office: _____
Signature _____

Please note:

1) An applicant for a Stormwater Management Permit Review must file with the Authorized Enforcement Authority: a completed application form with original signatures of all owners plus ten (10) copies thereof; one (1) copy of the abutters' list, certified by the Assessors' Office; ten (10) copies of the Stormwater Management Plan and project description as specified in Section 6 of these Rules and Regulations; ten (10) copies of the Erosion and Sediment Control Plan as required by Section 7 of these Rules and Regulations; ten (10) copies of the Operation and Maintenance Plan as required by Section 8 of these Rules and Regulations and payment of the application and review fees.

2) The date of receipt by the Conservation Commission Administrator shall be the official filing date.

3) The Application and Review Fee shall be dependent on the project size and is as follows: $2500 for projects 1-2 acres in size; $3,500 for projects 2-3 acres in size; and $1,000 per acre for projects greater than 3 acres.

4) The Inspection Fee shall be in an amount equal to seven hundred and fifty dollars ($750) per acre.

5) Legal ad prepared by the Conservation Administrator and printed at the applicant's expense in the Lynnfield Villager with the same submittal deadlines as Notices of Intent.

6) The applicant shall provide notification to all abutters and any property owner within 100 feet of the property line of the land where the activity is proposed, including if separated from that land by a public or private street. Notice must be made in writing by Certificates of Mailing or Certified Mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Appendix D

Stormwater System Mapping

Mapping Status

Requirement Summary	Status
Phase I – Must be Complete by July 1, 2020	
1. Outfalls and receiving waters	Complete
2. Open channel conveyances	Not started
3. Interconnections with other MS4s	Complete
4. Municipally owned structural BMPs	Complete
5. Waterbody names and impairments	Complete
6. Initial catchment delineations by topography	Complete
Phase II – Must be Complete by July 1, 2028	
1. Outfalls with spatial accuracy +/-30 feet	Complete
2. Pipe connectivity	Minimally Complete (updates ongoing)
3. Manholes	Complete
4. Catch basins	Complete
5. Refined catchment delineations	Not started
6. Municipal sanitary system	Not Applicable
7. Municipal combined sewer system	Not Applicable

NORTH READING

MIDDLETON

DANVERS

READING

PEABODY

WAKEFIELD

Wills Brook

Beaverdam Brook

Saugus River

Hawkes Pond

Walden Pond

NORTH HILL DRIVE

HILLTOP ROAD

KIMBERLY TERRACE

COOKS FARM LANE

CORTLAND LANE

TOPHET ROAD

ALDERNEY WAY

TOWNSEND ROAD

PERKINS LANE

CANDLEWOOD ROAD

CHESTNUT STREET

JUNIPER ROAD

HIDDEN LANE

HART ROAD

WINDSOR ROAD

HERITAGE LANE

NEW MEADOW ROAD

EDWARD AVENUE

PINE STREET

RAMP-MAIN ST TO RT 95 SB

RAMP-MAIN ST TO RT 95 NB

YANKEE DIVISION HIGHWAY

PAPPAS WAY

VILLAGE RUN

PARTRIDGE LANE

GLEN DRIVE

VIKING LANE

NORRIS ROAD

RUSSET LANE

ORCHARD LANE

BALDWIN LANE

APPLE HILL LANE

RIDER MILL ROAD

LOWELL STREET

PINE HILL ROAD

Pagoda Way

WING ROAD

WILLOWBY WAY

LANGSHIRE COURT

LIS WAY

CHATHAM AVENUE

DAVENTRY COURT

HATHAWAY ROAD

GREY LANE

MIRABEAU LANE

CHATHAM WAY

YORKSHIRE DRIVE

BARNSLEY ROAD

MIDLAND ROAD

HAMPTON COURT

ESSEX STREET

RICHARDS ROAD

PRISCILLA ROAD

PHILLIPS ROAD

SAUNDERS ROAD

GRANT ROAD

MAIN STREET

DEXTER ROAD

OXBOW ROAD

GRAYLAND ROAD

BEAVER AVENUE

HUTCHINS CIRCLE

LINCOLN AVENUE

HOWARD AVENUE

FOREST HILL AVENUE

STILLMAN ROAD

JORDAN AVENUE

WESTOVER DRIVE

PEYTON WAY

TAYLOR TERRACE

ELDRETH WAY

TODD LANE

CREST ROAD

HIGHLAND AVENUE

PROSPECT AVENUE

PILLINGS POND ROAD

DRIFTWOOD LANE

OAKRIDGE TERRACE

WILDEWOOD DRIVE

LANTERN LANE

MAGNOLIA DRIVE

EDGEMERE ROAD

SUMMER STREET

STRAFFORD ROAD

DUNSTAN ROAD

BROOKS LANE

GERRY ROAD

REED ROAD

RICHARDS ROAD

THOMAS ROAD

TRICKET ROAD

BANCROFT STREET

ATHERTON CIRCLE

LANDERS ROAD

FERNWAY

WALNUT STREET

MELCH ROAD

ROBIN ROAD

HUNTING LANE

COTTINGHAM ROAD

ARCHER LANE

OLD SALEM STREET

SALEM STREET

WINCHESTER DRIVE

HORSESHOE DRIVE

KIMBALL LANE

SPARHAWK DRIVE

TEDFORD LANE

BLUE JAY ROAD

BIRCH LANE

DALY ROAD

ALEXANDRA ROAD

DEBSTON LANE

FLETCHER ROAD

DONCASTER ROAD

OAK STREET

MOULTON DRIVE

GREEN STREET

PARK STREET

CLARK ROAD

MUNROE STREET

GROVE STREET

MOULTON LANE

BROADWAY

SUBSURFACE ROAD NORTHBOUND

SUBSURFACE ROAD SOUTHBOUND

CANTERBURY ROAD

LODGE ROAD

LAUREL ROAD

SYLVAN CIRCLE

FAIRVIEW ROAD

LYNNBROOK ROAD

CONDON CIRCLE

LODGAT TERRACE

LYNNFIELD COMMONS

Legend

- Outfalls
- Catch Basin
- Drainage Manhole
- Pipe End
- Interconnections
- MassDOT Catch Basin
- MassDOT DMH
- MassDOT Pipe End
- Drainage Pipe
- Town-Owned BMPs
- Pond, Reservoir
- Wetland, Marsh
- Stream, Brook

N

W E

S

0 0.25 0.5 0.75 1

Miles

Stormwater Infrastructure Map

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Sources: CEI, MassGIS, Town of Lynnfield

9/30/2021

Appendix E

Inventory of Municipal Properties

Inventory of Town-Owned Facilities

Site Name	Address	Map Label
Department of Public Works		
Department of Public Works and Garage	55 Summer Street	D1
Golf Courses		
Reedy Meadow Golf Course	195 Summer Street	G1
King Rail Reserve Golf Course	1 King Rail Drive	G2
Parks		
Jordan Park	3 Wildwood Road	P1
Glen Meadow Playground	24 Tricket Road	P2
Newhall Park	7 Oak Street	P3
Skull Cliff Hiking Area	Behind 325 Broadway	P4
Town Common / Memorial	Intersection of Main Street, Summer Street, and	P5
Freeman Park	31 Main Street	P6
Rotary Park	515 Summer Street	P7
Cemeteries		
Forest Hill Cemetery	126 Forest Hill Avenue	C1
Willow Cemetery	1033 Summer Street	C2
West Cemetery	East of Beaver Avenue and Main Street	C3
Old West Cemetery	South Common Street	C4
Old South Cemetery	Near 842 MA-129	C5
Fire Stations		
Lynnfield Fire Department Headquarters	59 Summer Street	FD1
South Fire Station	598 Salem Street	FD2
Police Department		
Lynnfield Police Department	55 Summer Street	PD1
Libraries		
Lynnfield Public Library	18 Summer Street	L1
Other Building		
Public Buildings		
Town Hall	55 Summer Street	T1
Lynnfield Media Studios	600 Market Street	T2
Schools		
Superintendent's Office	525 Salem Street	*S1*
Preschools		
Lynnfield Preschool	262 Summer Street	S2
Elementary Schools		
Huckleberry Hill Elementary School	5 Knoll Road	*S3*
Summer Street Elementary School	262 Summer Street	S4
Middle Schools		
Lynnfield Middle School	505 Main Street	S5
High Schools		
Lynnfield High School	275 Essex Street	S6
Parking Facilities		
Parking Lot	Between Broadway Tailoring and Loui's Pizza	PL1
MISCELLANEOUS - NOT TOWN ENTITY OR INCLUDED WITH OTHER TOWN ENTITY		
Maria Goretti Field	112 Chestnut Street	
Parking Facilities	47 Summer Street	
Housing and Redevelopment Authority		
Lynnfield Housing Authority	600 Ross Drive	
Name Not Listed	680 Main Street	
Colonial Gardens	2 Ross Drive	
Lynnfield Center Water District		
Lynnfield Center Water District	83 Phillips Road	
Lynnfield Water District	842 Salem Street	
Water Tower	3 Knoll Road	
Water Tower	Near 329 MA-129	
Pumping Station	22 Broadway	
Pumping Station	End of Glen Drive	

NORTH READING
MIDDLETON
DANVERS
PEABODY
WAKEFIELD
SAUGUS
LYNN
NORTH HILL DRIVE
Wills Brook
CORTLAND LANE
TOPHET ROAD
APPLE HILL LANE
LOWELL STREET
WING ROAD
DURHAM DRIVE
Beaverdam Brook
CHATHAM WAY
GREY LANE
ESSEX STREET
HART ROAD
CHESTNUT STREET
MAIN STREET
HERITAGE LANE
PINE STREET
Saugus River
WILDEWOOD DRIVE
EDGEMERE ROAD
SUMMER STREET
THOMAS ROAD
BISHOPS LANE
LOCKSLEY ROAD
ALEXANDRA ROAD
YANKEE DIVISION HIGHWAY
SALEM STREET
BROADWAY
KIMBALL LANE
WALNUT STREET
Hawkes Pond
Walden Pond
Crystal Lake
C1
C2
C3
C4
C5
P1
P2
P3
P4
P5
P6
P7
PL1
L1
S1
S2, S4
S3
S5
S6
FD2
D1, FD1, PD1, T1
G1
G2
T2

Municipal Properties:

- Cemeteries
- Golf Courses
- Low-Income Housing
- Municipal Buildings
- Parking
- Parks
- Schools and Community Buildings
- Lake, Pond, Reservoir
- Wetland, Marsh, Swamp
- Stream, Brook

N
W
E
S

0 0.25 0.5 0.75 1
Miles

Municipal Properties

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Sources: CEI, MassGIS, Town of Lynnfield

5/12/2020

Appendix F

Plan for Optimizing Catch Basin Cleaning

Plan for Optimizing Catch Basin Cleaning

Lynnfield, MA

June 2019

Prepared For:

The Town of Lynnfield
55 Summer St
Lynnfield, MA 01940

Prepared by:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740

Table of Contents

Plan for Optimizing Catch Basin Cleaning – Lynnfield, MA

1 Introduction 1

2 Permit Requirements 1

3 Existing Catch Basin Management Program 2

3.1 Inspection and Cleaning Schedule 2

4 Plans to Refine Catch Basin Cleaning Optimization 2

4.1 Optimization Methodology 2

4.2 Catch Basin Cleaning Standard Operation Procedure (SOP) 2

4.3 Catch Basin Cleanings Storage and Disposal 2

List of Appendices

Appendix A. Map of Drainage Infrastructure

Appendix B. Standard Operating Procedures for Catch Basin Cleaning and Inspection

1 Introduction

This Catch Basin Cleaning Optimization Plan has been prepared by Lynnfield, MA to address the catch basin inspection, cleaning and maintenance 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 MS4 Permit."

The 2016 MS4 Permit requires the permittee to document its plan for optimizing catch basin cleaning, inspections, or its schedule for gathering information to develop the optimization plan. This plan documents the Town's existing catch basin cleaning program and its plans for gathering additional information to refine its program to meet the requirements of the permit.

2 Permit Requirements

This Catch Basin Cleaning Optimization Plan addresses Section 2.3.7.a.iii.2 of the 2016 MS4 Permit (Infrastructure Operations and Maintenance), which includes the following requirements:

- **Establish a schedule** with the goal that the frequency of routine cleaning will ensure that no catch basin at any time will be more than 50 percent full[1];
- **Prioritize** inspection and maintenance for catch basins:
    - located near construction activities[2]. These should be cleaned more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings;
    - discharging to impaired waters where the pollutant of concern is solids, oil and grease, or metals; and
    - with sumps more than 50% full during consecutive inspections.
- **Establish proper documentation** of catch basin inspections to include:
    - the location and total number of catch basins;
    - the location and total number of catch basins cleaned or inspected; and
    - the total volume or mass of material removed from catch basins.
- **Develop an optimization plan** for catch basin cleaning, inspection plans, or a schedule for gathering information to develop the optimization plan in the first annual report and in the SWMP.

[1] A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.
[2] Roadway construction; residential, commercial, or industrial development or redevelopment.

3 Existing Catch Basin Management Program

The Town has approximately 1,700 catch basins to clean and maintain. Refer to the map in **Appendix A**. The Town cleans each catch basin on a yearly basis typically during the summer months.

3.1 Inspection and Cleaning Schedule

The Town hires an outside contractor that uses a clam shell to complete the yearly cleanings of all catch basins. During cleaning, the contractor observes and records limited inspection details of catch basins, which are recorded on a tracking form. The City is exploring the use of electronic tracking compatible with GIS in the future.

Catch basin cleaning materials are stored at the Department of Public Works yard.

4 Plans to Refine Catch Basin Cleaning Optimization

4.1 Optimization Methodology

The following outlines Lynnfield's proposed methodology for collecting sediment depth data and optimizing its inspection/cleaning schedule to meet the requirements of the 2016 MS4 Permit.

Moving forward, Lynnfield will continue to implement its existing annual catch basin cleaning. During this time, it will collect data on the sump depth and sediment depth in each catch basin. The catch basin inspection form included with the standard operating procedure (SOP) in **Appendix B** will be used to document data collected during cleaning. A minimum of two years of data will be collected and evaluated to determine the status of the catch basins and whether the sump was more than half full. The catch basins that are more than 50% full will be evaluated for potential factors that may have contributed to it being 50% full (i.e., smaller sump, nearby construction, surrounding land uses, location in town). The evaluation will be used to identify catch basins that require more frequent inspection and/or cleaning and to develop an optimization plan that prioritizes these structures accordingly.

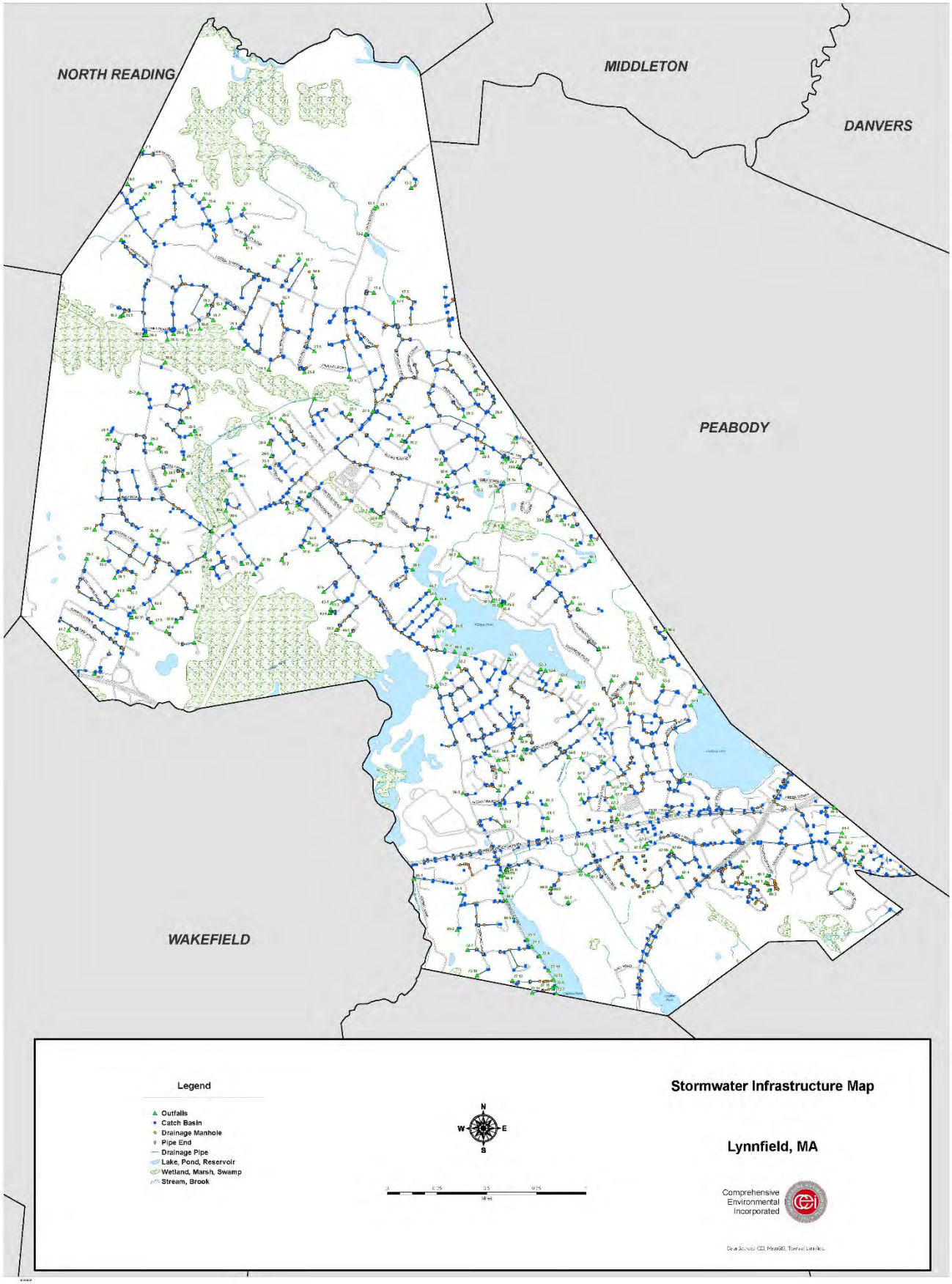
4.2 Catch Basin Cleaning Standard Operation Procedure (SOP)

All catch basins will be inspected and cleaned following the standard operating procedures (SOP) provided in **Appendix B**.

4.3 Catch Basin Cleanings Storage and Disposal

Lynnfield currently stores catch basin cleanings at the DPW yard. The Town will explore possible beneficial uses for its collected catch basin cleanings.

Appendix A: Map of Drainage Infrastructure


NORTH READING
MIDDLETON
DANVERS
PEABODY
WAKEFIELD
Legend
Outfalls
Catch Basin
Drainage Manhole
Pipe End
Drainage Pipe
Lake, Pond, Reservoir
Wetland, Marsh, Swamp
Stream, Brook
N
W
E
S
Stormwater Infrastructure Map
Lynnfield, MA
Comprehensive Environmental Incorporated

Appendix B: SOPs

Standard Operating Procedures for Catch Basin Cleaning and Inspection

SOP. MI-2 Catch Basin Cleaning and Inspection

Permit Requirements

As required by the 2016 MS4 Permit, catch basin inspection and cleaning requirements include the following:

- **Inspect and clean catch basins** to ensure that no catch basin is not more than 50 percent full;
- **Prioritize inspection and maintenance** for catch basins:
  - located near construction activities;
  - discharging to impaired waters; and
  - with sumps more than 50% full during consecutive inspections.
- **Establish proper documentation** of catch basin inspections; and
- **Develop an optimization plan** for catch basin cleaning and inspection**.**

Before Cleaning and/or Inspection

- **Notify residents and business** of catch basin cleaning schedule to restrict parking that could obstruct catch basin cleaning operations.
- **Gather** all required forms and maps.
  - Catch Basin Inspection Form; and
  - Maps of area to be cleaned/inspected

Cleaning and Inspection during Cleaning

1. Clean sediment and trash off of grate.
2. Remove grate.
3. Fill out **Catch Basin Inspection Form** with basin-specific information:
   - **Before cleaning**:
     - Do a visual inspection of outside of grate.
     - Do a visual inspection of the inside of the catch basin to determine cleaning needs and structural issues.
     - Measure depth from rim of catch basin to top of sediment.
     - Measure depth from rim of catch basin to the top of the outlet pipe.
     - Take photo of catch basin.
   - **Clean catch basin**:
     - For manual removal, place removed material in a location protected from potential runoff and place cleanings in a vehicle for transport to designated disposal area.
     - OR use a high-powered vac truck to remove sediment.

- **After cleaning**:
    - Measure depth from rim to bottom of catch basin.
    - Measure depth of sump (outlet pipe to bottom of catch basin).
    - Note if the catch basin is more than 50% full with sediment.
    - Note if the catch basin requires maintenance or it there are pollutants present.
    - Take photo of catch basin.

4. **Storage:** Bring cleanings to designated location at the Lynnfield DPW Yard at 55 Summer Street, Lynnfield, MA for storage and disposal.
5. If any illicit discharges are observed or suspected, notify supervisor.

Interim Inspection between Cleaning Cycles

1. Clean sediment and trash off grate.
2. Remove grate.
3. Fill out **Catch Basin Inspection Form** with basin-specific information:
    - Do a visual inspection of outside of grate.
    - Do a visual inspection of the inside of the catch basin to determine cleaning needs and structural issues.
    - Measure depth from rim of catch basin to top of sediment.
    - Using sump depth collected during previous cleaning, note if the catch basin is more than 50% full with sediment.
    - Note if the catch basin requires maintenance or if there are pollutants present.
4. If any illicit discharges are observed or suspected, notify supervisor.

Catch Basin Inspection Form

Inspection Information			
Catch Basin ID			
Street Location		GPS Location	
Inspector's Name			
Date of Inspection		Time of Inspection	
Weather (circle)	Dry Light Rain Heavy Rain Snow		

Catch Basin Information		
Location	**Surface Type**	**Grate**
☐ Road/Curb ☐ Alley ☐ Ditch ☐ Parking Lot ☐ Driveway ☐ Sidewalk Other:_____	☐ Asphalt ☐ Gravel ☐ Concrete ☐ Grass/Dirt Other:_____	____inches x ____ inches Material: _____ Shape:

Catch Basin Condition	
CB Damage: No Yes	Comment:

	Materials (circle)					**Condition (circle)**			
Grate	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Frame	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Chimney	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Walls	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Trap/Hood	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Sump	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent

Sediment Depth and IDDE (inches)	
A. Depth from Rim to Top of Sediment: _____ B. Depth from Rim to Bottom of Basin (after vac): _____ C. Sump Depth: _____ D. Depth of Sediment (B-A): _____ E. More than 50% Full of Sediment? (D/C): _____ **CB Cleaned?** No Yes **Suspected illicit discharge?** No Yes	Check those Present: __Sanitary Waste/Smell __Excessive Sediment __Oil Sheen __Floatables/Trash __Pet Waste: Other:_____ Potential Source: _____

LYNNFIELD DEPARTMENT OF PUBLIC WORKS
CATCH BASIN CLEANING REPORT

Page ____/____

______________________ Operator

______________________ Day/Date

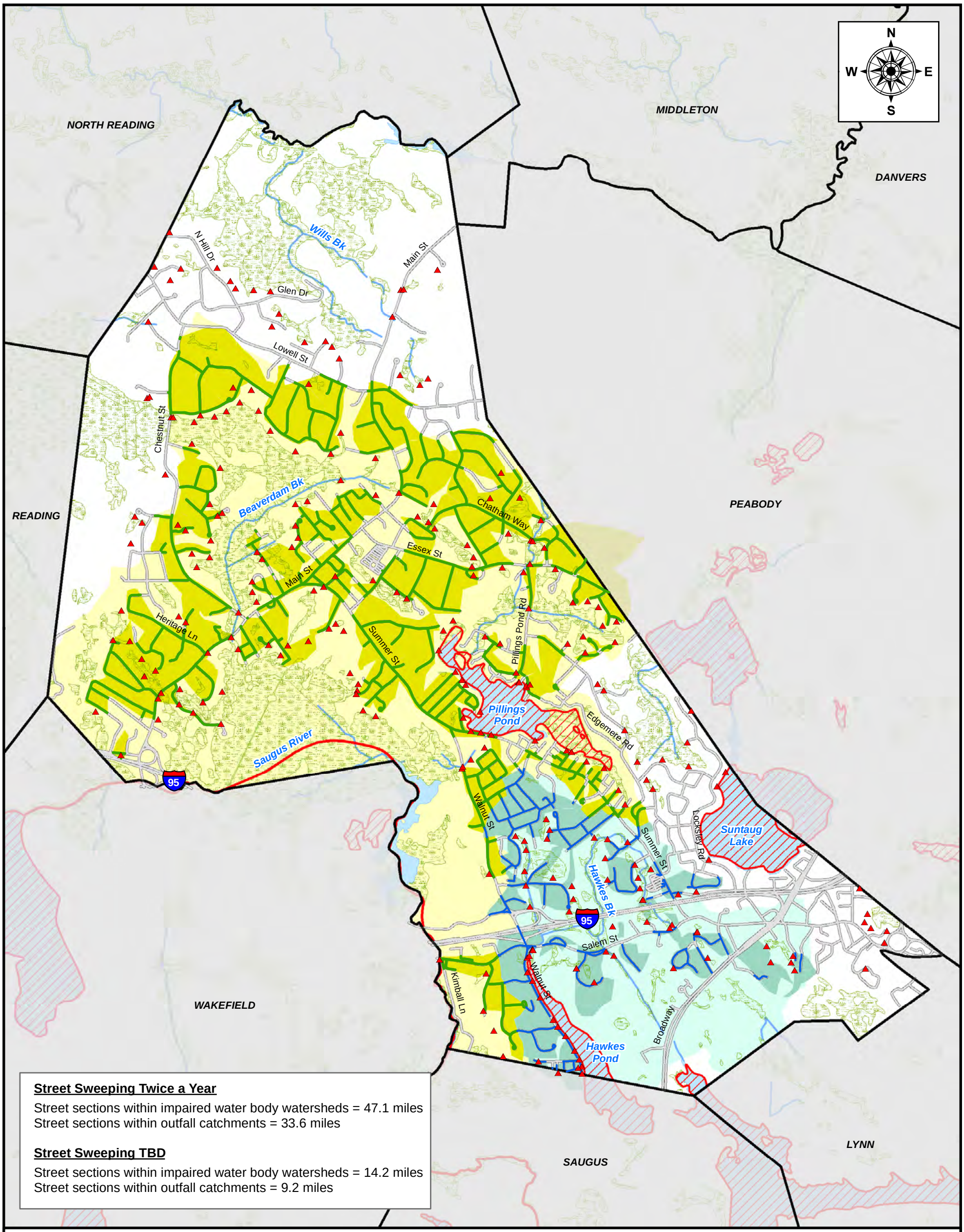
______________________ Weather

______________________ Machine Used(bucket volume)

Catch Basin ID/Location	Volume Removed	Top of Water	Top of Sediment	Bottom of Basin	Discharge Pipe Invert	More than 50% Full?	Illegal Discharge/Dumping Event None/Unknown/Dog Waste/ Floatables/Sheen	Work Needed Grate Broken/Brick Work/Caving in Near Basin/Adjust/Other

Appendix G

Street Sweeping Map



Legend

- Drainage Outfall

303d Water Bodies
- Impaired Lake, Pond
- Impaired River, Stream

Hydrography
- Surface Water
- Wetland
- Stream, Brook

Outfall Catchments
- Sweep Twice a Year
- Sweep TBD

Impaired Water Body Subbasin
- Sweep Twice a Year
- Sweep TBD

Road in Outfall Catchments
- Sweep TBD
- Sweep Twice a Year

Note: The Town of Lynnfield is entirely within an Urbanized Area (UA) boundary

0 2,500 5,000 7,500 Feet

Street Sweeping Map

Sweeping per Phase II Requirements

Lynnfield, Massachusetts

Comprehensive Environmental Inc.

Appendix H

Town Owned Stormwater BMPs and Estimated Pollutant Reductions and BMP Inspection Reports

Town Owned Stormwater BMPs and Estimated Pollutant Reductions
BMP Inspection Reports

Town Owned Stormwater BMPs and Estimated Pollutant Reductions

Town Owned Stormwater BMPs

Street/Facility	BMP	Comments
Blue Jay Road	Separation Chamber	Located at corner of Bluejay and Walnut Street
Elizabeth Way	Detention Basin	Located at the end of cul-de-sac
Fall Way	Recharge System	Located under road at beginning of street
Gianna Drive	Detention Basins	2 located at northerly side of Gianna Drive, at the beginning
High School	Underground Detention Basin&Infiltration Gallies/Detention Basin	Located on the southerly side of school/Easterly side of parking lot
Horseshoe Drive	Detention Basin	Located on the westerly side of the circle
Huckleberry Hill School	Underground Detention Tank	Located in parking lot
Lynnbrook Road	Detention Basin	Located at the end of cul-de-sac
Mansfield Road	Detention Basin	at the easterly end of Mansfield Road
Melody Lane	Detention Basin	Located towards the end of street
Middle School	Infiltration System	Located at the center of the property
Middle School Track	Detention Basins	2 Basins located at the westerly side of track
Murphy Way	Detention Basin	Located at the end of cul-de-sac
Newhall Park	Vorsentry Unit	Located in parking lot
Rourke Lane	Infiltration/Recharge System	Entire street drains to the recharge system
Senior Center	Infiltration Systems	Located in parking lots
Summer Street School	Infiltration Trench	Located at the Northerly side of property
Thistle Lane	Infiltration System	Perforated Pipe located in street
Yorkshire Drive	Deep Sump Manhole	Located at the intersection of Yorkshire and Grey

Pollutant Load Reductions per Structural BMP, Lynnfield, Massachusetts												
BMP No.	Project ID	BMP Type	Subcatment Area (acres)	Impervious Area (acres)	% Impervious Area	BMP Storage Capacity (ft^3)/ Filter Depth (in.)	Phosphorus BMP Efficiency (%)	Nitrogen BMP Efficiency (%)	Sediment BMP Efficiency (%)	Removed Phosphorus Load (lb/yr)	Removed Nitrogen Load (lb/yr)	Removed Sediment Load (lb/yr)
1	DPW_DS_BMP_11-1 (MURPHY WAY NORTHERN BASIN)	EXTENDED DRY DETENTION POND	4.04	2.31	57%	24,000.00	14.0	23.1	49.0	0.54	8.5	547.5
2	DPW_DS_BMP_11-1 (MURPHY WAY SOUTHERN BASIN)	EXTENDED DRY DETENTION POND	7.49	2.31	31%	57,000.00	14.0	23.1	49.0	0.64	10.4	648.6
3	DPW_DS_BMP_16-1 (ROURKE LANE)	INFILTRATION TRENCH	15.7	4.2	27%	460.00	9.8	19.3	14.8	0.66	12.0	285.5
4	DPW_DS_BMP_32-1 (YORKSHIRE DRIVE)	EXTENDED DRY DETENTION POND	12.57	2.79	22%	90.00	0.3	0.1	1.6	0.01	0.1	20.7
5	DPW_DS_BMP_33-1 (MELODY LANE)	EXTENDED DRY DETENTION POND	10.99	3.29	30%	1,200.00	8.9	8.2	39.8	0.59	5.4	757.6
6	DPW_DS_BMP_33-2 (HIGH SCHOOL INFILTRATION SYSTEM)	INFILTRATION TRENCH	4.39	1.15	26%	1,400.00	47.4	81.0	72.8	1.02	14.8	333.0
7	DPW_DS_BMP_33-2 (HIGH SCHOOL POROUS PAVEMENT NEAR ENTRANCE)	POROUS PAVEMENT	3.42	1.89	55%	4,000.00	75.0	77.0	96.0	2.56	22.3	695.2
8	DPW_DS_BMP_33-2 (HIGH SCHOOL POROUS PAVEMENT NEAR SWALE)	POROUS PAVEMENT	2.1	0.92	44%	20,500.00	75.0	77.0	96.0	1.25	10.9	341.4
9	DPW_DS_BMP_33-2 (HIGH SCHOOL SWALE/DRY INFILTRATION BASIN)	INFILTRATION BASIN	1.05	0.1	10%	4,500.00	98.8	100.0	100.0	0.20	1.8	44.5
10	DPW_DS_BMP_37-1 (MIDDLE SCHOOL INFILTRATION TRENCH NEAR BASEBALL FIELD)	INFILTRATION TRENCH	2.617	1.741	67%	1,800.00	23.5	46.3	35.6	0.73	12.3	236.1
11	DPW_DS_BMP_37-1 (MIDDLE SCHOOL INFILTRATION TRENCH NEAR TENNIS COURT)	INFILTRATION TRENCH	3.781	2.412	64%	450.00	17.0	33.4	25.7	0.74	12.3	236.4
12	DPW_DS_BMP_37-1 (MIDDLE SCHOOL LEACHING CATCH BASINS)	INFILTRATION BASIN	1.976	1.318	67%	910.00	64.7	80.0	86.0	1.53	16.1	432.0
13	DPW_DS_BMP_37-2 (MIDDLE SCHOOL TRACK NORTHERN BASIN)	BIORETENTION	1.792	0.379	21%	5,600.00	63.0	40.0	100.0	0.39	1.9	256.3
14	DPW_DS_BMP_37-2 (MIDDLE SCHOOL TRACK SOUTHERN BASIN)	BIORETENTION	1.8	0.503	28%	2,700.00	63.0	40.0	100.0	0.51	2.4	336.0
15	DPW_DS_BMP_38-1 (SUMMER STREET SCHOOL)	INFILTRATION TRENCH	2.65	0.68	26%	70.00	1.9	6.0	3.4	0.03	1.0	14.0
16	DPW_DS_BMP_43-1 (ELIZABETH WAY)	EXTENDED DRY DETENTION POND	8.97	3.06	34%	51,000.00	14.0	23.1	49.0	0.82	13.3	831.3
17	DPW_DS_BMP_52-1 (HUCKLEBERRY SCHOOL DETENTION TANK)	EXTENDED DRY DETENTION POND	3.12	2.23	71%	10,000.00	12.5	15.6	46.5	0.51	5.4	403.3
18	DPW_DS_BMP_52-1 (HUCKLEBERRY SCHOOL GALLEYS)	INFILTRATION TRENCH	2.45	2.23	91%	2,900.00	62.3	86.9	85.5	2.49	29.4	724.9
19	DPW_DS_BMP_55-1 (THISTLE LANE)	INFILTRATION BASIN	2.72	1.2	44%	230.00	19.7	29.1	33.7	0.40	5.4	192.7
20	DPW_DS_BMP_62-1 (SENIOR CENTER EASTERN BASIN)	INFILTRATION BASIN	1.39	0.76	55%	75.00	11.1	16.0	18.2	0.16	2.0	55.6
21	DPW_DS_BMP_62-1 (SENIOR CENTER SOUTHERN BASIN)	INFILTRATION BASIN	1.57	0.62	39%	75.00	13.7	19.7	22.3	0.17	2.1	58.5
22	DPW_DS_BMP_62-1 (SENIOR CENTER WESTERN BASIN)	INFILTRATION BASIN	0.48	0.23	48%	75.00	36.8	53.0	60.2	0.16	2.0	56.7
23	DPW_DS_BMP_63-1 (FALL WAY)	INFILTRATION TRENCH	17.54	4.68	27%	1,500.00	15.6	48.5	27.7	1.85	54.9	894.1
24	DPW_DS_BMP_63-2 (NEWHALL PARK INFILTRATION SYSTEM)	INFILTRATION TRENCH	7.47	2.42	32%	1,600.00	30.2	69.0	51.5	1.55	29.5	1007.7
25	DPW_DS_BMP_63-2 (NEWHALL PARK VORSENTRY UNIT)	EXTENDED DRY DETENTION POND	0.68	0.17	25%	90.00	4.4	2.1	24.0	0.02	0.1	35.7
26	DPW_DS_BMP_67-1 (HORSESHOE DRIVE)	WET POND/CREATED WETLAND	5.67	2.59	46%	160,000.00	63.0	40.0	86.0	2.71	16.0	1055.7
27	DPW_DS_BMP_69-1 (LYNNBROOK ROAD)	EXTENDED DRY DETENTION POND	10.19	3.02	30%	91,000.00	14.0	23.1	49.0	0.76	11.8	753.0
28	DPW_DS_BMP_72-1 (BLUE JAY ROAD)	EXTENDED DRY DETENTION POND	34.69	20.3	59%	530.00	0.2	0.1	1.3	0.07	0.3	120.8
29	DPW_DS_BMP_72-2 (GIANNA DRIVE EASTERN SWALE)	GRASS SWALE (CONVEYANCE)	1.82	0.36	20%	11,600.00	36.0	23.1	90.0	0.26	1.3	249.1
30	DPW_DS_BMP_72-2 (GIANNA DRIVE WESTERN SWALE)	GRASS SWALE (CONVEYANCE)	0.72	0.28	39%	19,300.00	36.0	23.1	90.0	0.17	1.0	122.3
31	DPW_DS_BMP_72-3 (MANSFIELD ROAD)	WET POND/CREATED WETLAND	1.40	0.63	45%	36,000.00	63.0	40.0	86.0	0.66	3.9	257.3
									TOTAL:	24.18	310.27	12003.43

BMP Inspection Reports

STORMWATER INSPECTION REPORT

To:	Charles Richter, P.E., Town of Lynnfield DPW
From:	Rebecca Balke, P.E., Comprehensive Environmental Inc.
Date:	July 3, 2019, revised December 24, 2019
Locations:	Blue Jay Rd, Elizabeth Way, Fall Way, Gianna Dr, Mansfield Rd, Horseshoe Dr, Lynnbrook Rd, Melody Ln, Murphy Way, Rourke Ln, Thistle Rd, High School, Huckleberry School, Middle School, Middle School (Track), Summer St School, Newhall Park, and The Senior Center
Town:	Lynnfield, MA
Inspectors:	Ben Lundsted, Nick Shaw, Elisha Musgraves, Chris McGuinness, CEI
Inspection Dates:	June 19, 2019 and June 24, 2019

Under the Environmental Protection Agency's (EPA's) 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, regulated communities such as Lynnfield are required to annually inspect stormwater Best Management Practices (BMPs) within the regulated Urbanized Area (UA) and maintain as needed. The Town of Lynnfield DPW identified 18 different locations or sites with BMPs and provided detailed design plans for each site.

In response, Comprehensive Environmental Inc. (CEI) performed an inspection of stormwater BMPs at the identified locations on June 19, 2019 and June 24, 2019. This was done to evaluate the general condition and document recommended inspection and maintenance items for follow-up action.

Inspections included 18 BMP sites/locations and 51 individual BMPs that varied in size, type and condition. The BMP locations are identified by a town-wide GIS grid numbering system and each site might have several different BMPs that were inspected. These individual BMPs are identified by the numbering shown on the provided design plans or numbered based on inspection order completed by CEI at each site. These inspections are detailed in the attached inspection sheets and each individual BMP inspection is highlighted under each row of the inspection sheets. As a place holder, BMPs that were identified on design plans, but could not be found in the field also have a designated row in the inspection sheets. For summary purposes, Table 1 identifies the BMPs that could not be found, while Table 2 details the locations and individual BMPs that were inspected (in some cases individual BMPs are bundled together for each site, while others are broken into multiple BMP components for each site depending on specific field observations).

At the time of the inspections, the weather was approximately 75 degrees and sunny for both days. Weather over a three-day period leading up to June 19th was upper 60s to low 70s and rained within 12 hours prior to performing the site investigations. Weather over a three-day period leading up to June 24th was upper 70s to low 80s with no rain prior to performing the site investigations. Ben Lundsted, P.E., Nick Shaw, Elisha Musgraves, and Chris McGuinness of CEI performed the inspections.

Table 1 – Stormwater Infrastructure That Could Not be Found or Was Not Inspected

BMP ID	Location	Stormwater BMP Type	Year Built	Reason
DPW_DS_BMP_11-1	Murphy Way	Detention Basin #2	1994	On or behind private property. No access.
DPW_DS_BMP_37-1	Middle School	Water Quality Unit #1, Underground Baffle Tank #1, & Subsurface Infiltration System #1	2001	Covered with sod or portions removed as part of field modifications.
DPW_DS_BMP_37-2	Middle School	Leaching Catch Basins: # 2 & 3	2001	Covered with sod or never installed.
DPW_DS_BMP_38-1	Summer St School	Underground System; Infiltration Trench	2002	Paved over; Overgrown with grass.
DPW_DS_BMP_52-1	Huckleberry School	Underground System	2002	Buried and manhole paved over.
DPW_DS_MBP_72-1	Blue Jay Rd	Underground System	1979	On or behind private property. No access.

Photographs of the BMPs that were inspected are provided at the end of this report, and inspection sheets are attached.

Recommendations

Some BMPs were in good operating order and required minor maintenance as noted on the attached inspection sheets. Minor maintenance might include removal of minor sediment or plant material buildup, trimming back or removal of vegetation, curb or edge of road maintenance, and general landscaping. Please note that additional maintenance requirements are listed under the "comments" tab of the attached inspection sheets. There might also be notes that highlight potential issues associated with maintenance access or lack thereof. In some cases, maintenance activities may also include vegetation clearing and potential grading to provide access to specific BMPs that require major or minor maintenance.

As noted previously, the inspected BMPs are all located within the regulated UA or discharge to waters of the United States. Minor maintenance should be completed based on comments in the attached inspection sheets and BMPs that could not be accessed for inspection should be confirmed or located so that inspection and maintenance can be completed. This may require contacting property owners or confirming that Town records reflect as-built conditions accurately. Additionally, there are BMPs located within the UA that were inspected and require repair or higher level maintenance.

Based on CEI's inspections, Table 2 summarizes observations that were noted for each BMP site or series of BMPs at each site. Where potential maintenance conditions were observed (i.e., sediment

accumulation, deterioration, etc.), the action standard used to determine if more immediate maintenance actions were needed is also provided in the table. If the observed condition exceeds the action standard, a follow up action is recommended. In some cases, multiple observations were made at individual BMP locations, but not all observations require follow-up action. In these cases, the action item in **bold** font is listed first. The table lists the BMPs numerically by their BMP ID.

Table 2 – Stormwater Infrastructure Inspected and Maintenance Recommendations

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
DPW_DS_BMP_11-1	Murphy Way	Detention Basin #1	1994	6/19/19	Overgrown woody vegetation on berm or earthen embankment. BMP is older than 20 years.	Presence of woody vegetation >3 inches caliper and toppled trees with exposed root system.	**Cut and remove large woody vegetation and toppled trees on downstream embankment portions (take care to carefully remove root ball and replace with compacted fill).**
					Riprap near outlet displaced.	Loss of riprap stone <12 inches in any dimension – No exposed fabric.	No immediate actions. Inspect annually and repair and stabilize outlet with supplemental stone armoring as needed.
DPW_DS_BMP_16-1	Rourke Ln	Leaching Catch Basins	1981	6/24/19	Debris accumulation	Accumulation >1/2 depth from BMP bottom to lowest invert pipe.	**Remove debris from subsurface leaching structures to restore storage capacity (mainly LCB#6).**
DPW_DS_BMP_31-1	Melody Ln	Detention Basin	1993	6/19/19	Sediment accumulation.	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove sediment as needed to maintain function.
					Overgrown vegetation observed. BMP older than 20 years. Potential invasives.	Overgrown vegetation is minor and does not impact function or capacity.	No immediate actions. Inspect annually and cut/remove vegetation as needed to maintain function. Monitor for the presence of invasive species in late

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
							spring and early fall. Remove if detected.
					Minor erosion on side slopes.	Erosion not contributing to sedimentation of impacting function.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
DPW_DS_BMP_33-2	High School	Underground Infiltration System	2012	6/19/19	System in good condition.	NA	No immediate actions. Inspect annually.
DPW_DS_BMP_33-2	High School	Dry Swale	2012	6/19/19	Sparse vegetation and bare spots could lead to future erosion.	Sparse vegetation not impacting function.	No immediate actions. Inspect annually and repair bare spots with new vegetation to stabilize and prevent future erosion.
DPW_DS_BMP_33-2	High School	Porous Pavement	2012	6/19/19	BMPs in good condition. Very minor sediment accumulation on porous pavement that could lead to minor puddling or clogging.	Sediment is not impacting function or capacity.	No immediate actions. Inspect annually. Vacuum sediment as needed to maintain infiltration capacity and function of BMPs.
DPW_DS_BMP_37-1	Middle School	Leaching Catch Basins: #1, 5, 6, & 8	2001	6/19/19	Overgrown vegetation. BMP 18 years old.	Vegetation growing over covers in lawn areas. Not impacting function or capacity.	No immediate actions. Inspect annually and cut back sod as needed to maintain access.

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
					Structural damage.	Minor chipping of concrete structure. No Cracks. Small voids <3 inches in any dimension.	No immediate actions. Inspect annually and patch / repair concrete if voids exceed action standard.
					Minor sediment accumulation in LCB #5.	Sediment is not impacting function or capacity.	No immediate actions. Inspect annually. Vacuum sediment as needed to maintain infiltration capacity and function of BMPs.
DPW_DS_BMP_37-1	Middle School	Water Quality Unit #2, Underground Baffle Tank #2 and Subsurface Infiltration System #2	2001	6/19/19	Debris, trash & floatable accumulation.	Floatables (tennis balls), debris and trash covering >50% of the structure surface area and blocking pipes.	**Remove floatables, debris and trash from the subsurface water quality unit and baffle tank to restore function and capacity.**
DPW_DS_BMP_37-1	Middle School	Leaching Catch Basins: #4 & 7	2001	6/19/19	Structural damage.	Sidewalls of concrete structure cracked with large voids missing >3 inches in any dimension.	**Patch / repair concrete sidewalls as needed.**

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
					Overgrown vegetation. BMP 18 years old.	Vegetation growing over covers in lawn areas. Not impacting function or capacity.	No immediate actions. Inspect annually and cut back sod as needed to maintain access.
DPW_DS_BMP_37-2	Middle School (Track)	Drainage System	2017	6/19/19	Sediment accumulation	Sediment accumulated on pavement and clogged drainage system that drains to Rain Garden #2. Accumulation >1/2 depth from structure bottom to lowest invert pipe.	**Remove / vacuum sediment on pavement surface and in drainage system to restore capacity and prevent damage to downgradient BMP.**
DPW_DS_BMP_37-2	Middle School (Track)	Rain Garden #1	2017	6/19/19	Overgrown vegetation on side slopes and bottom (overgrowth of specific species may impact other preferred plant species). Potential invasives.	Vegetation not impacting function / capacity.	No immediate actions. Inspect annually and mow/remove vegetation as needed to maintain function and aesthetics. Monitor for the presence of invasive species in both late spring and early fall. Remove if detected.

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
					Displaced riprap at inlet.	Loss of riprap stone <12 inches in any dimension. No exposed fabric.	No immediate actions. Inspect annually and repair and stabilize outlet with supplemental stone armoring as needed.
DPW_DS_BMP_37-2	Middle School (Track)	Rain Garden #2	2017	6/19/19	Erosion on side-slopes	Erosion undermining BMP components (inlet piping).	**Repair erosion with compacted fill and stabilize with fabric and stone armor. Review options for re-direction of drainage to prevent channelizing.**
					Animal burrows or holes on side-slopes.	Animal burrows undermining BMP components.	**Repair holes from animal burrows with compacted fill and stabilize.**
					Dead vegetation and landscape up-keep.	Loss of vegetation or dead vegetation not impacting function or capacity.	No immediate actions. Inspect annually and perform landscape maintenance as needed. Remove and replace dead vegetation to maintain function and/or aesthetics.
DPW_DS_BMP_38-1	Summer St School	Underground System	2002	6/24/19	BMP is in good condition. Some sediment deposits.	Sediment is not impacting function or capacity.	No immediate actions. Vacuum sediment as needed to maintain infiltration capacity and function of BMPs.

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
DPW_DS_BMP_43-1	Elizabeth Way	Detention Basin	2002	6/19/19	BMP is in good condition. Some standing water.	NA	No immediate actions. Inspect annually.
DPW_DS_BMP_52-1	Huckleberry School	Underground System	2002	6/24/19	Sediment accumulation.	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove sediment as needed.
DPW_DS_BMP_52-1	Huckleberry School	Underground System	2002	6/24/19	Structural damage	Masonry cracked and fallen. Voids > 3 inches in any dimension.	**Patch / repair masonry as needed.**
DPW_DS_BMP_55-1	Thistle Ln	Leaching Catch Basins	1989	6/24/19	Sediment accumulation	Sediment accumulation >1/2 depth from BMP bottom to lowest invert pipe.	**Remove sediment from underground structures to restore storage and infiltration capacity.**
					Structural damage	Masonry cracked and fallen. Voids > 3 inches in any dimension.	**Patch / repair masonry as needed.**
DPW_DS_BMP_62-1	Senior Center	Leaching Catch Basin; Underground System	2004	6/19/19	Sediment accumulation.	Sediment accumulation >1/2 depth bottom to invert.	**Remove sediment from underground structures to restore storage and infiltration capacity (in particular LCB #2).**

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
					Clogged inlet / outlet piping.	Pipe is clogged >25% capacity	**Jet and clean sediment from piping to restore capacity.**
					Trash & debris accumulation.	Debris not impacting function of capacity.	No immediate actions. Inspect annually and remove debris to maintain capacity.
DPW_DS_BMP_63-1	Fall Way	Underground System	1987	6/19/19	Sediment accumulation in north and south manholes.	Accumulation >1/2 depth from BMP bottom to lowest invert pipe.	**Remove sediment to restore storage capacity.**
					North and south manholes curbed over. Grates could not be removed to enable full inspection.	Blockage impacting access to subsurface structure interior.	**Remove curbing to restore access and enable future inspection and maintenance.**
DPW_DS_BMP_63-2	Newhall Park	Proprietary Separator	2016	6/24/19	System in good condition.	NA	No immediate actions. Inspect annually.
DPW_DS_BMP_63-2	Newhall Park	Leaching Catch Basin &	2016	6/24/19	Sediment accumulation.	Sediment accumulation >1/2 depth bottom to invert.	**Remove sediment from underground structures to restore storage and infiltration capacity.**

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
		Underground System			Clogged Inlet / Outlet Piping.	Pipe is clogged >25% capacity with sediment	**Jet and clean sediment from piping to restore capacity.**
DPW_DS_BMP_67-1	Horseshoe Drive	Detention Pond	1999	6/24/19	Debris accumulation (sediment / plant material).	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove debris to maintain capacity.
					Overgrown vegetation on side-slopes (non-berm). BMP older than 20 years.	Vegetation not impacting function/capacity.	No immediate actions. Inspect annually and cut/remove vegetation on side-slopes as needed.
					Erosion on side-slopes.	Erosion <6 inches in any dimension and not contributing to sedimentation.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
					Exposed riprap on side-slopes.	Loss of riprap <12 inches in any dimension.	No immediate actions. Inspect annually and repair with supplemental stone armoring as needed.
DPW_DS_BMP_69-1	Lynnbrook Rd	Detention Basin	1990	6/19/19	Invasive species observed.	Invasive vegetation could impact function / capacity.	**Remove and dispose of invasive species to maintain function and storage capacity.**

STORMWATER INSPECTION REPORT

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
					Overgrown vegetation on side-slopes and bottom. BMP older than 20 years.	Vegetation not impacting function / capacity or access.	No immediate actions. Inspect annually and cut/remove vegetation as needed to maintain function.
DPW_DS_BMP_72-2	Gianna Drive	Dry Swales	2001	6/24/19	Over-grown vegetation on side-slopes (non-berm) or bottom. BMP is older than 18 years.	Vegetation not impacting function or capacity	No immediate actions. Inspect annually and cut/remove vegetation as needed to maintain function and access.
					Minor erosion on side slopes (non-berm).	Erosion not contributing to sedimentation or impacting function.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
DPW_DS_BMP_72-3	Mansfield Rd	Detention Pond	2001	6/24/19	Erosion on side-slopes.	Erosion causing excessive sedimentation.	**Repair erosion with compacted fill and stabilize with fabric and stone armoring as needed.**
					Riprap Stone displaced on Side-Slopes.	Loss of stone <12 inches in any dimension.	No immediate actions. Inspect annually and repair and stabilize slopes with supplemental stone armoring as needed.
					Over-grown vegetation on side-slopes.	Vegetation not impacting function / capacity or access.	No immediate actions. Inspect annually and cut/remove vegetation as needed to maintain function.

STORMWATER INSPECTION REPORT

To:	Charles Richter, P.E., Town of Lynnfield DPW
From:	Rebecca Balke, P.E., Comprehensive Environmental Inc.
Date:	October 23, 2020
Locations:	Blue Jay Rd, Elizabeth Way, Fall Way, Gianna Dr, Mansfield Rd, Horseshoe Dr, Lynnbrook Rd, Melody Ln, Murphy Way, Rourke Ln, Thistle Rd, High School, Huckleberry School, Middle School, Middle School (Track), Summer St School, Newhall Park, and Lynnfield Senior Citizens Center
Town:	Lynnfield, MA
Inspectors:	Nick Shaw, Sara Nelson, CEI
Inspection Dates:	May 12, 2020 and May 14, 2020

Under the Environmental Protection Agency's (EPA's) 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, regulated communities such as Lynnfield are required to annually inspect stormwater Best Management Practices (BMPs) within the regulated Urbanized Area (UA) and maintain as needed. In response, Comprehensive Environmental Inc. (CEI) performed an inspection of stormwater BMPs at the identified locations on May 12, 2020 and May 14, 2020. This was done to evaluate the general condition and document recommended inspection and maintenance items for follow-up action.

Inspections

The Town of Lynnfield DPW identified 18 different BMP sites/locations and 50 individual BMPs that varied in size, type and condition, and provided detailed design plans for each site. BMP sites/locations are identified by a town-wide GIS grid numbering system and each site might have several different BMPs that were inspected. Individual BMPs are identified by the numbering shown on the provided design plans or numbered based on inspection order completed by CEI at each site.

A total of 13 BMPs that were identified on design plans but could not be found in the field are listed in Table 1, along with relevant field observations as to why they could not be located. Table 2 provides a summary of the maintenance recommendations based on the inspections. Maintenance was recommended for 27 of the 37 BMPs that were inspected (in some cases individual BMPs are bundled together for each site, while others are broken into multiple BMP components for each site depending on specific field observations). Inspection results of all 37 BMPs that were inspected are provided in the attached table with maintenance needs shown in bold. Inspection results are detailed in the attached inspection sheets.

At the time of the inspections, the weather was approximately 50 to 70 degrees and sunny for both days. Weather over a three-day period leading up to May 12th was between 30 and 55 degrees and rained within 12 hours prior to performing the site investigations. Weather over a three-day period

leading up to May 14th was between 40 and 65 degrees with the last rain event occurring on May 11th. Nick Shaw and Sara Nelson of CEI performed the inspections.

Table 1 – Stormwater BMPs That Could Not be Found or Were Not Inspected

BMP ID	Location	Stormwater BMP Type	Year Built	Reason
DPW_DS_ BMP_37-1	Middle School	Water Quality Unit #1, Underground Baffle Tank #1, & Subsurface Infiltration System #1 (3 BMPs total)	2001	Covered with sod or portions removed as part of field modifications.
DPW_DS_ BMP_37-1	Middle School	Leaching Catch Basins: # 2 & #3 (2 BMPs total)	2001	Covered with sod or never installed.
DPW_DS_ BMP_37-2	Middle School (Track)	Drainage System	2017	Unknown location.
DPW_DS_ BMP_38-1	Summer St School	Underground System; Infiltration Trench and Drainage Manhole #6 (2 BMPs total)	2002	Paved over; Overgrown with grass.
DPW_DS_ BMP_38-1	Summer St School	Underground System: Drainage Manhole #5	2002	Covered by playscape rubber matting.
DPW_DS_ BMP_52-1	Huckleberry School	Underground System; Two Infiltration Galleys & Drainage Manhole #11 (2 BMPs total)	2002	Buried in woods behind school and manhole paved over.
DPW_DS_ BMP_62-1	Senior Citizens Center	Leaching Catch Basin #3	2004	Buried under mulch or removed during paved driveway expansion.
DPW_DS_ MBP_72-1	Blue Jay Rd	Underground System	1979	On or behind private property. Not accessible from Blue Jay Rd.

Photographs of the BMPs that were inspected are provided at the end of this report, and inspection sheets are attached.

Recommendations

10 BMPs are in good operating order and do not require maintenance. The remaining 27 BMPs are in fair condition and require at least some minor maintenance as noted on the attached inspection sheets. Minor maintenance generally includes removal of plant material buildup, sediment vacuuming, trimming back or removal of vegetation, curb or edge of road maintenance, and general landscaping. Table 2 below provides a brief summary of maintenance requirements for each BMP where

maintenance is required. A table summarizing the inspections results of all 37 BMPs is attached including maintenance recommendations shown in bold. Additional information on BMP condition or observations are provided under the "comments" tab of the attached inspection sheets.

Table 2 – BMP Maintenance Recommendations Summary

BMP ID	BMP Location	Recommendations
DPW_DS_ BMP_11-1	Murphy Way Detention Basin	• Cut and remove vegetation on side slopes as needed to maintain function and storage capacity.
DPW_DS_ BMP_16-1	Rourke Lane Leaching Catch Basins – north	• Remove sediment from subsurface leaching structures to restore storage capacity.
DPW_DS_ BMP_33-1	Melody Lane Detention Basin	• Jet and clean inlet pipe which is approximately 50% full of sediment. Immediate action recommended.
DPW_DS_ BMP_33-2	High School Dry Swale	• Replace vegetation to limit side slope erosion. Inspect annually.
DPW_DS_ BMP_33-2	High School Underground Infiltration System	• Remove sediment and repair fabric screen to restore functionality.
DPW_DS_ BMP_37-1	Middle School Water Quality Unit #2, Underground Baffle Tank #2 and Subsurface Infiltration System #2 (3 BMPs total)	• Remove floatables, debris and trash from the subsurface water quality unit and baffle tank to restore function and capacity.
DPW_DS_ BMP_37-1	Middle School Leaching Catch Basins: #1, 4, 5, 6, 7, & 8 (6 BMPs total)	• Unclog bottom to restore infiltration capabilities. Inspect annually.
DPW_DS_ BMP_37-2	Middle School (Track) Rain Garden #1	• Jet and clean pipe. Inspect annually.
DPW_DS_ BMP_37-2	Middle School (Track) Manhole System	• Remove floatables to prevent clogging.
DPW_DS_ BMP_43-1	Elizabeth Way Detention Basin	• Jet and clean pipe. Inspect annually.
DPW_DS_ BMP_55-1	Thistle Lane Leaching Catch Basins	• Patch / repair masonry as needed. • Remove accumulation / clean out underdrains / scarify bottom surface
DPW_DS_ BMP_62-1	Senior Center Underground System with Leaching Catch Basin #2	• Remove sediment from underground structures to restore storage and infiltration capacity. • Remove accumulation / clean out underdrains / scarify bottom surface. • Jet and clean sediment from piping to restore capacity.

BMP ID	BMP Location	Recommendations
DPW_DS_ BMP_62-1	Senior Center Leaching Cath Basin #1	• Remove accumulation / clean out underdrains / scarify bottom surface.
DPW_DS_ BMP_63-1	Fall Way Underground Systems (2 BMPs total)	• Remove/replace curbs to create accessibility to catch basins
DPW_DS_ BMP_67-1	Horseshoe Drive Detention Basin	• Remove floatables to prevent clogging.
DPW_DS_ BMP_69-1	Lynnbrook Rd Detention Basin	• Remove and dispose of invasive species to maintain function and storage capacity. • Cut/remove vegetation as needed to maintain function. • Remove dead trees fallen into BMP.
DPW_DS_ BMP_72-2	Gianna Drive Dry Swale #1	• Jet and clean pipe. Remove sediment and debris from pipe.
DPW_DS_ BMP_72-2	Gianna Drive Dry Swal #2	• Remove and dispose of invasive in accordance with regulations.
DPW_DS_ BMP_72-3	Mansfield Road Detention Pond	• Remove and dispose of invasives in accordance with regulations. • Remove and replace vegetation as needed to maintain function.

BMPs that could not be accessed for inspection should be confirmed or located so that inspection and maintenance can be completed. This may require contacting property owners or confirming that Town records reflect as-built conditions accurately.

Attachments:

Attachment 1. Stormwater BMP Map
Attachment 2. Summary of Stormwater Infrastructure Inspected and Maintenance Recommendations
Attachment 3. Stormwater inspection reports and photographs

Attachment 1.
Stormwater BMP Map

NORTH READING
MIDDLETON
DANVERS
PEABODY
WAKEFIELD
SAUGUS
LYNN
Wills Brook
Beaverdam Brook
Saugus River
Hawkes Pond
Walden Pond
Crystal Lake
LOWELL STREET
CORTLAND LANE
TOPHET ROAD
APPLE HILL LANE
WING ROAD
DURHAM DRIVE
CHATHAM WAY
GREY LANE
ESSEX STREET
HART ROAD
CHESTNUT STREET
MAIN STREET
HERITAGE LANE
PINE STREET
BOURQUE ROAD
WILDEWOOD DRIVE
EDGEMERE ROAD
BISHOPS LANE
SUMMER STREET
THOMAS ROAD
MELCH ROAD
LOCKSLEY ROAD
WALNUT STREET
YANKEE DIVISION HIGHWAY
SALEM STREET
BROADWAY
KIMBALL LANE
DPW_DS_BMP_11-1
DPW_DS_BMP_16-1
DPW_DS_BMP_33-2
DPW_DS_BMP_33-1
DPW_DS_BMP_37-1
DPW_DS_BMP_37-2
DPW_DS_BMP_38-1
DPW_DS_BMP_43-1
DPW_DS_BMP_52-1
DPW_DS_BMP_55-1
DPW_DS_BMP_63-2
DPW_DS_BMP_62-1
DPW_DS_BMP_63-1
DPW_DS_BMP_67-1
DPW_DS_BMP_69-1
DPW_DS_BMP_72-1
DPW_DS_BMP_72-3
DPW_DS_BMP_72-2

Legend

- Town-Owned BMPs
- Roads
- Lake, Pond, Reservoir
- Wetland, Marsh, Swamp
- Stream, Brook

N
W E
S

0 0.25 0.5 0.75 1
Miles

Stormwater BMP Map

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Sources: CEI, MassGIS, Town of Lynnfield

10/16/2020

Attachment 2.
Summary of Stormwater Infrastructure Inspected and Maintenance Recommendations

STORMWATER INSPECTION REPORT – ATTACHMENT 2

Summary of Stormwater Infrastructure Inspected and Maintenance Recommendations

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring routine inspection with no immediate follow up action required							
DPW_DS_ BMP_16-1	Rourke Ln	Leaching Catch Basins – south	1981	5/12/2020	Some ponding water below outlet pipe.	NA	No immediate actions. Inspect annually.
DPW_DS_ BMP_33-2	High School	Porous Pavement near Dry Swale	2012	5/12/2020	System in good condition.	N/A	No immediate actions. Inspect annually.
DPW_DS_ BMP_33-2	High School	Porous Pavement near parking lot entrance	2012	5/12/2020	Sediment accumulation.	Sediment is not impacting function or capacity.	No immediate actions. Inspect annually. Vacuum sediment as needed to maintain infiltration capacity and function of BMPs.
DPW_DS_ BMP_37-2	Middle School (Track)	Rain Garden #2	2017	5/12/2020	System in good condition.	N/A	No immediate actions. Inspect annually.
DPW_DS_ BMP_52-1	Huckleberry School	Underground System: MH# 1, 2, and 4 (3 BMPs total)	2002	5/14/2020	Sediment accumulation.	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove sediment as needed.
					Debris accumulation.	Less than ½ depth from bottom to invert.	No immediate actions. Inspect annually and remove debris as needed.
DPW_DS_ BMP_52-1	Huckleberry School	Underground System: MH# 3	2002	5/14/2020	Sediment accumulation.	Less than ½ depth from bottom to invert.	Remove sediment to restore storage capacity. Inspect annually.
					Debris accumulation.	Less than ½ depth from bottom to invert.	Inspect annually.

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring routine inspection with no immediate follow up action required							
					Structural damage.	Broken/cracked concrete blocks at top of manhole.	Inspect annually.
DPW_DS_ BMP_63-2	Newhall Park	Proprietary Separator	2016	5/12/2020	System in good condition.	NA	No immediate actions. Inspect annually.
DPW_DS_ BMP_63-2	Newhall Park	Underground Infiltration Basin	2016	5/12/2020	System in good condition.	NA	No immediate actions. Inspect annually.

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_11-1	Murphy Way	Detention Basin	1994	5/12/2020	Debris accumulation.	Less than ½ depth from bottom to invert.	No immediate action. Inspect annually and remove debris as needed to restore storage capacity.
					Overgrown vegetation on side slope and bottom.	Presence of woody vegetation >3 inches caliper. Vegetation impacting BMP function/capacity.	**Cut and remove large woody vegetation and toppled trees on side slopes as needed to maintain function and storage capacity.**
					Minor erosion on side slopes.	Erosion not causing excess sedimentation.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
DPW_DS_ BMP_16-1	Rourke Ln	Leaching Catch Basins – north	1981	5/12/2020	Sediment accumulation.	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	**Remove sediment from subsurface leaching structures to restore storage capacity.**

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_33-1	Melody Ln	Detention Basin	1993	5/12/2020	Sediment accumulation.	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove sediment as needed to maintain function.
					Clogged Inlet/Outlet Piping	Any portion of pipe clogged >1/4 capacity.	**Jet and clean inlet pipe which is approximately 50% full of sediment. Immediate action recommended.**
					Minor erosion on side slopes.	Erosion not contributing to sedimentation of impacting function.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
DPW_DS_ BMP_33-2	High School	Dry Swale	2012	5/12/2020	Check dam stones displaced.	Numerous check dam stones displaced throughout swale.	No immediate action required. Inspect annually, replace stones as needed.
					Erosion on side slopes.	Erosion not causing excess sedimentation of BMP undermining.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation
					Dead vegetation.	Dead vegetation on side slope causing erosion >6 inches in any dimension.	**Replace vegetation to limit side slope erosion. Inspect annually.**
DPW_DS_ BMP_33-2	High School	Underground Infiltration System	2012	5/12/2020	Sediment accumulation.	Greater than ½ depth from bottom to invert.	**Remove sediment and repair fabric screen to restore functionality.**

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_37-1	Middle School	Water Quality Unit #2, Underground Baffle Tank #2 and Subsurface Infiltration System #2 (3 BMPs total)	2001	5/14/2020	Debris, trash & floatable accumulation.	Floatables (tennis balls), debris and trash covering >50% of the structure surface area and blocking pipes.	**Remove floatables, debris and trash from the subsurface water quality unit and baffle tank to restore function and capacity.**
DPW_DS_ BMP_37-1	Middle School	Leaching Catch Basins: #1, 4, 5, 6, 7, & 8 (6 BMPs total)	2001	5/14/2020	Sediment accumulation.	Less than ½ depth from bottom to invert.	No immediate action. Inspect annually and remove sediment as needed to restore storage capacity.
					Debris accumulation	Less than ½ depth from bottom to invert.	No immediate action. Inspect annually and remove debris as needed to restore storage capacity.
					Bottom of Infiltration area clogged.	Less than ¾ of bottom area covered by sediment.	**Unclog bottom to restore infiltration capabilities. Inspect annually.**
					Floatables buildup.	Less than 50% surface area covered.	No immediate action. Inspect annually and remove floatables as needed.
DPW_DS_ BMP_37-2	Middle School (Track)	Rain Garden #1	2017	5/12/2020	Clogged inlet pipe.	Any portion of pipe clogged greater than 25% of pipe clogged.	**Jet and clean pipe.** Inspect annually.

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_37-2	Middle School (Track)	Manhole System	2017	5/14/2020	Sediment accumulation	Less than ½ depth from bottom to invert.	No immediate action. Inspect annually.
					Debris accumulation (sediment / plant material).	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove debris as needed to maintain capacity.
					Floatable buildup.	Greater than 50% of surface area or block any portion of a pipe. Sheen water surface.	**Remove floatables to prevent clogging.**
					Bottom of infiltration area clogged.	Less than ¾ of bottom area covered by sediment.	No immediate action. Inspect annually.
DPW_DS_ BMP_43-1	Elizabeth Way	Detention Basin	2002	5/12/2020	Clogged inlet pipes.	Any portion of pipe clogged greater than 25% capacity.	**Jet and clean pipe.** Inspect annually.
					Erosion on side slopes and bottom.	Erosion not causing excess sedimentation or undermining.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
DPW_DS_ BMP_55-1	Thistle Ln	Leaching Catch Basins	1989	5/12/2020	Structural Damage	Masonry cracked and fallen. Voids > 3 inches in any dimension.	**Patch / repair masonry as needed.**
					Bottom of infiltration area clogged.	Standing water >48 hours after a storm and bottom area covered by sediment.	**Remove accumulation / clean out underdrains / scarify bottom surface.**

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_62-1	Senior Center	Underground System with Leaching Catch Basin #2	2004	5/14/2020	Sediment accumulation.	Sediment accumulation >1/2 depth bottom to invert.	**Remove sediment from underground structures to restore storage and infiltration capacity.**
					Bottom of infiltration area clogged.	Standing water >48 hours after a storm and bottom area covered by sediment.	**Remove accumulation / clean out underdrains / scarify bottom surface.**
					Clogged inlet / outlet piping.	Pipe is clogged >25% capacity	**Jet and clean sediment from piping to restore capacity.**
DPW_DS_ BMP_62-1	Senior Center	Leaching Catch Basin #1	2004	5/14/2020	Sediment/ debris accumulation	Accumulation <1/2 depth from BMP bottom to lowest invert pipe, however bottom of infiltration area clogged. Standing water >48 hours after a storm.	**Remove accumulation / clean out underdrains / scarify bottom surface**.
DPW_DS_ BMP_63-1	Fall Way	Underground Systems (2 BMPs total)	1987	5/12/2020	Structural damage.	Cracked/broken concrete and bricks in southern catch basins.	No immediate action. Inspect annually and repair/replace broken sections on catch basins as needed.
					Curbed over.	Northern catch basins are curbed over and inaccessible.	**Remove/replace curbs to create accessibility to catch basins.**

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_67-1	Horseshoe Drive	Detention Pond	1999	5/12/2020	Debris accumulation (sediment / plant material).	Accumulation <1/2 depth from BMP bottom to lowest invert pipe.	No immediate actions. Inspect annually and remove debris as needed to maintain capacity.
					Floatable buildup.	Greater than 50% of surface area or block any portion of a pipe.	**Remove floatables to prevent clogging.**
					Overgrown woody vegetation in emergency spillway.	Woody vegetation <3" caliper or blocking 25% of spillway width.	No immediate action. Inspect annually.
					Erosion on side slopes.	Erosion not causing excess sedimentation of undermining.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation
					Animal burrows on side slopes.	Not causing excess sedimentation of undermining.	No immediate action. Inspect annually.

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_69-1	Lynnbrook Rd	Detention Basin	1990	5/12/2020	Sediment accumulation.	Less than ½ depth from bottom to invert.	No immediate action. Remove sediment to restore storage capacity. Inspect annually.
					Debris accumulation.	Less than ½ depth from bottom to invert.	No immediate action. Inspect annually.
					Partially clogged inlet pipe.	Any portion of pipe clogged less than 25% of pipe clogged.	No immediate action. Inspect annually and jet and clean as needed.
					Invasive species observed.	Invasive vegetation could impact function / capacity.	**Remove and dispose of invasive species to maintain function and storage capacity.**
					Overgrown vegetation on bottom.	Vegetation impacting function / capacity or access.	**Cut/remove vegetation with removal of dead trees and invasives as needed to maintain capacity.**
					Erosion on side slopes.	Erosion not causing excess sedimentation of undermining.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation
					Dead vegetation.	Dead vegetation impacting function.	**Remove dead trees fallen into BMP.**

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_72-2	Gianna Drive	Dry Swale #1	2001	5/12/2020	Debris accumulation.	Less than ½ depth from bottom to invert.	No immediate action. Inspect annually.
					Clogged inlet pipe.	Any portion of pipe clogged >¼ capacity.	**Jet and clean pipe. Remove sediment and debris from pipe.**
					Minor erosion on side slopes (non-berm).	Erosion not contributing to sedimentation or impacting function.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
DPW_DS_ BMP_72-2	Gianna Drive	Dry Swale #2	2001	5/12/2020	Debris accumulation.	Less than ½ depth from bottom to invert.	No immediate actions. Inspect annually and remove debris as needed.
					Presence of invasive species.	Invasive vegetation could impact function / capacity.	**Remove and dispose of invasives in accordance with regulations.**
					Erosion on side slopes and bottom.	Erosion not causing excess sedimentation or undermining.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.

STORMWATER INSPECTION REPORT – ATTACHMENT 2

BMP ID	Location	Stormwater BMP Type	Year Built	Inspection Date	Field Observations	Action Standard	Inspection or Maintenance Action
BMPs requiring follow up action.							
DPW_DS_ BMP_72-3	Mansfield Rd	Detention Pond	2001	5/12/2020	Debris accumulation	Less than ½ depth from bottom to invert.	Inspect annually and remove debris as needed to restore storage capacity.
					Presence of invasive species.	Potentially invasive species growing throughout BMP.	**Remove and dispose of invasives in accordance with regulations.**
					Erosion on side slopes.	Erosion not causing excess sedimentation or undermining.	No immediate actions. Inspect annually and repair / stabilize slopes as needed to minimize erosion or sedimentation.
					Dead vegetation.	Loss of vegetation impacting function.	**Remove and replace vegetation as needed to maintain function.**

Attachment 3.
Stormwater Inspection Reports and Photograph

STORMWATER BMP INSPECTION REPORT

To:	Patrick McAlpine, Town Engineer, Town of Lynnfield DPW
From:	Rebecca Balke, P.E., Comprehensive Environmental Inc.
Date:	November 2021
Locations:	Bluejay Road, Elizabeth Way, Fall Way, Gianna Drive, Horseshoe Drive, Lynnbrook Road, Mansfield Road, Melody Lane, Murphy Way, Newhall Park, Rourke Lane, Thistle Road, Yorkshire Drive, High School, Huckleberry Hill School, Middle School, Middle School (Track), Summer Street School, and Lynnfield Senior Citizens Center
Town:	Lynnfield, MA
Inspectors:	Sara Nelson, CEI
Inspection Dates:	May 25, 2021 and May 27, 2021

Under the Environmental Protection Agency's (EPA's) 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, regulated communities such as Lynnfield are required to annually inspect stormwater Best Management Practices (BMPs) within the regulated Urbanized Area (UA) and maintain as needed. In response, Comprehensive Environmental Inc. (CEI) performed an inspection of stormwater BMPs at the identified locations on May 25, 2021 and May 27, 2021 to evaluate general conditions and document recommended inspection and maintenance items for follow-up action in order to meet permit requirements.

Inspections

The Town of Lynnfield DPW identified 19 different BMP sites/locations with 51 individual BMPs that varied in size, type and condition, and provided design plans for each site. BMP sites/locations are identified by a town-wide GIS grid numbering system and each site might have several different BMPs that were inspected. Individual BMPs are identified by the numbering shown on the provided design plans and by BMP type as noted by CEI on the inspection forms and are shown on a map provided under Attachment 1.

A total of 10 BMPs that were identified on design plans but could not be found in the field are listed in Table 1, along with relevant field observations as to why they could not be located. Table 2 provides a summary of the maintenance recommendations based on the inspections. Maintenance was recommended for 26 of the BMPs that were inspected (in some cases individual BMPs are bundled together for each site, while others are broken into multiple BMP components for each site depending on specific field observations). Photographs and inspection results of all BMPs that were inspected are provided under Attachment 2.

At the time of the inspections, the weather was approximately 50 to 70 degrees and sunny for both days. Weather over a three-day period leading up to May 25th and May 27th was between 50 and 80 degrees and rained within 12 hours prior to performing the site investigations on the 27th. Sara Nelson of CEI performed the inspections.

Table 1 – Stormwater BMPs That Could Not be Found or Were Not Inspected

BMP ID	Location	Stormwater BMP Type	Year Built	Reason
DPW_DS_ BMP_37-1	Middle School	Water Quality Unit #1, Underground Baffle Tank #1, & Subsurface Infiltration System #1 (3 BMPs total)	2001	Covered with sod or portions removed as part of field modifications.
DPW_DS_ BMP_37-1	Middle School	Leaching Catch Basins: # 2 & #3 (2 BMPs total)	2001	Covered with sod or never installed.
DPW_DS_ BMP_37-2	Middle School (Track)	Porous Pavement	2017	Unknown location.
DPW_DS_ BMP_38-1	Summer St School	Underground System: Drainage Manhole #5	2002	Covered by playscape rubber matting.
DPW_DS_ BMP_52-1	Huckleberry School	Underground System; Two Infiltration Galleys & Drainage Manhole #11 (2 BMPs total)	2002	Buried in woods behind school and manhole paved over.
DPW_DS_ BMP_62-1	Senior Citizens Center	Leaching Catch Basin #3	2004	Buried under mulch or removed during paved driveway expansion.

Recommendations

15 BMPs are in good operating order and do not require maintenance. The remaining 26 BMPs are in fair condition and require at least some minor maintenance as noted on the attached inspection sheets. Maintenance needs generally include removal of plant material buildup, sediment and debris removal, trimming or removal of vegetation, invasive species removal, curb or edge of road maintenance, side slope stabilization, pipe cleaning, and general landscaping. Table 2 below provides a brief summary of maintenance requirements for each BMP where maintenance is required. Comments on all inspected BMPs are provided in the attached inspection reports.

Table 2 – BMP Maintenance Recommendations Summary

BMP ID	BMP Location	BMP Type	Year Built	Requires Maintenance?	Recommendations
DPW_DS_ BMP_11-1	Murphy Way	Detention Basin	1994	Yes	• Cut and remove vegetation on side slopes and embankment as needed to maintain function and storage capacity. • Remove dead vegetation as needed to maintain storage capacity and function. Replant as required.
DPW_DS_ BMP_16-1	Rourke Lane	Leaching Catch Basins (2 BMPs)	1981	Yes	• Remove sediment, debris, and floatables to unclog bottom of catch basins and maintain function.
DPW_DS_ BMP_32-1	Yorkshire Drive	Deep Sump – Subsurface Infiltration	unknown	Yes	• Remove sediment, debris, and floatables to restore storage capacity and maintain function.
DPW_DS_ BMP_33-1	Melody Lane	Detention Basin	1993	Yes	• Remove buildup of sediment due to erosion to restore storage capacity.
DPW_DS_ BMP_33-2	High School	Dry Swale	2012	Yes	• Remove dead vegetation and replant as required to limit side slope erosion.
DPW_BS_ BMP_33-2	High School	Underground Infiltration System	2012	Yes	• Remove buildup of sediment to restore functionality
DPW_BS_ BMP_33-2	High School	Porous Pavement #1	2012	No	
DPW_BS_ BMP_33-2	High School	Porous Pavement #2	2012	No	
DPW_DS_ BMP_37-1	Middle School	Leaching Catch Basin #1	2001	No	
DPW_DS_ BMP_37-1	Middle School	Leaching Catch Basin #4	2001	No	
DPW_DS_ BMP_37-1	Middle School	Leaching Catch Basin #5	2001	No	

STORMWATER BMP INSPECTION REPORT

BMP ID	BMP Location	BMP Type	Year Built	Requires Maintenance?	Recommendations
DPW_DS_BMP_37-1	Middle School	Leaching Catch Basin #6	2001	No	
DPW_DS_BMP_37-1	Middle School	Leaching Catch Basin #7	2001	No	
DPW_DS_BMP_37-1	Middle School	Leaching Catch Basin #8	2001	No	
DPW_DS_BMP_37-1	Middle School	Water Quality Unit #2, Underground Baffle Tank #2 and Subsurface Infiltration System #2 (3 BMPs total)	2001	Yes	• Remove floatables, debris and trash from the subsurface water quality unit and baffle tank to restore function and capacity. • Install screen in catch basins which discharge to Water Quality Unit to prevent buildup of debris from entering system.
DPW_DS_BMP_37-2	Middle School (Track)	Rain Garden #1	2017	Yes	• Remove vegetation on side slope around inlet to prevent clogging.
DPW_DS_BMP_37-2	Middle School (Track)	Rain Garden #2	2017	Yes	• Jet and clean pipe.
DPW_DS_BMP_37-2	Middle School (Track)	Manhole System – Underground Infiltration	2017	Yes	• Remove sediment, debris, and floatables to prevent clogging.
DPW_DS_BMP_38-1	Summer Street School	Underground Infiltration System	2002	No	
DPW_DS_BMP_43-1	Elizabeth Way	Detention Basin	2002	No	

STORMWATER BMP INSPECTION REPORT

BMP ID	BMP Location	BMP Type	Year Built	Requires Maintenance?	Recommendations
DPW_DS_BMP_52-1	Huckleberry Hill School	Underground Detention (4 BMPs)	2002	No	
DPW_DS_BMP_55-1	Thistle Lane	Underground Infiltration	1989	Yes	• Patch / repair masonry as needed.
DPW_DS_BMP_62-1	Senior Center	Underground Infiltration System	2004	Yes	• Remove sediment from underground structures to restore storage and infiltration capacity.
DPW_DS_BMP_62-1	Senior Center	Leaching Catch Basin #2	2004	Yes	• Remove sediment from underground structures to restore storage and infiltration capacity. • Remove accumulation, clean out underdrains, and scarify bottom surface.
DPW_DS_BMP_62-1	Senior Center	Leaching Catch Basin #1	2004	Yes	• Remove accumulation of sediment, debris, and floatables. • Clean out underdrains and scarify bottom surface.
DPW_DS_BMP_63-1	Fall Way	Underground Systems (2 BMPs total)	1987	Yes	• Remove and replace curbs to create accessibility to catch basins
DPW_DS_BMP_63-2	Newhall Park	Vorsentry Unit	2016	Yes	• Remove accumulation of sediment, debris, and floatables.
DPW_DS_BMP_63-2	Newhall Park	Underground Infiltration	2016	Yes	• Remove accumulation of sediment, debris, and floatables • Clean out underdrains and scarify bottom surface.
DPW_DS_BMP_67-1	Horseshoe Drive	Detention Pond	1999	No	
DPW_DS_BMP_69-1	Lynnbrook Road	Detention Basin	1990	Yes	• Remove and dispose of invasive species to maintain function and storage capacity. • Cut/remove vegetation as needed to maintain function. • Remove dead trees fallen into BMP.

STORMWATER BMP INSPECTION REPORT

BMP ID	BMP Location	BMP Type	Year Built	Requires Maintenance?	Recommendations
DPW_DS_ BMP_72-1	Bluejay Road	Separation Chamber	1979	Yes	• Remove accumulation of sediment, debris, and floatables • Clean out underdrains and scarify bottom surface.
DPW_DS_ BMP_72-2	Gianna Drive	Dry Swale #1	2001	Yes	• Remove and dispose of invasive in accordance with regulations.
DPW_DS_ BMP_72-2	Gianna Drive	Dry Swale #2	2001	Yes	• Remove and dispose of invasive in accordance with regulations. • Cut/remove vegetation as needed to maintain function and storage capacity.
DPW_DS_ BMP_72-3	Mansfield Road	Detention Basin	2001	Yes	• Remove dead vegetation as needed to maintain function. • Remove vegetation and rocks from outlet grates to prevent clogging.

Locations should be maintained as noted above and inspected annually with the next inspection occurring during Year 4 of the MS4 Permit (July 1, 2021 through June 30, 2022). BMPs that could not be accessed for inspection should be confirmed or located so that inspection and maintenance can be completed. This may require contacting property owners or confirming that Town records reflect as-built conditions accurately.

If you have any further questions or would like additional information, please feel free to contact me at 800.725.2550 x308 or rbalke@ceiengineers.com. Thank you.

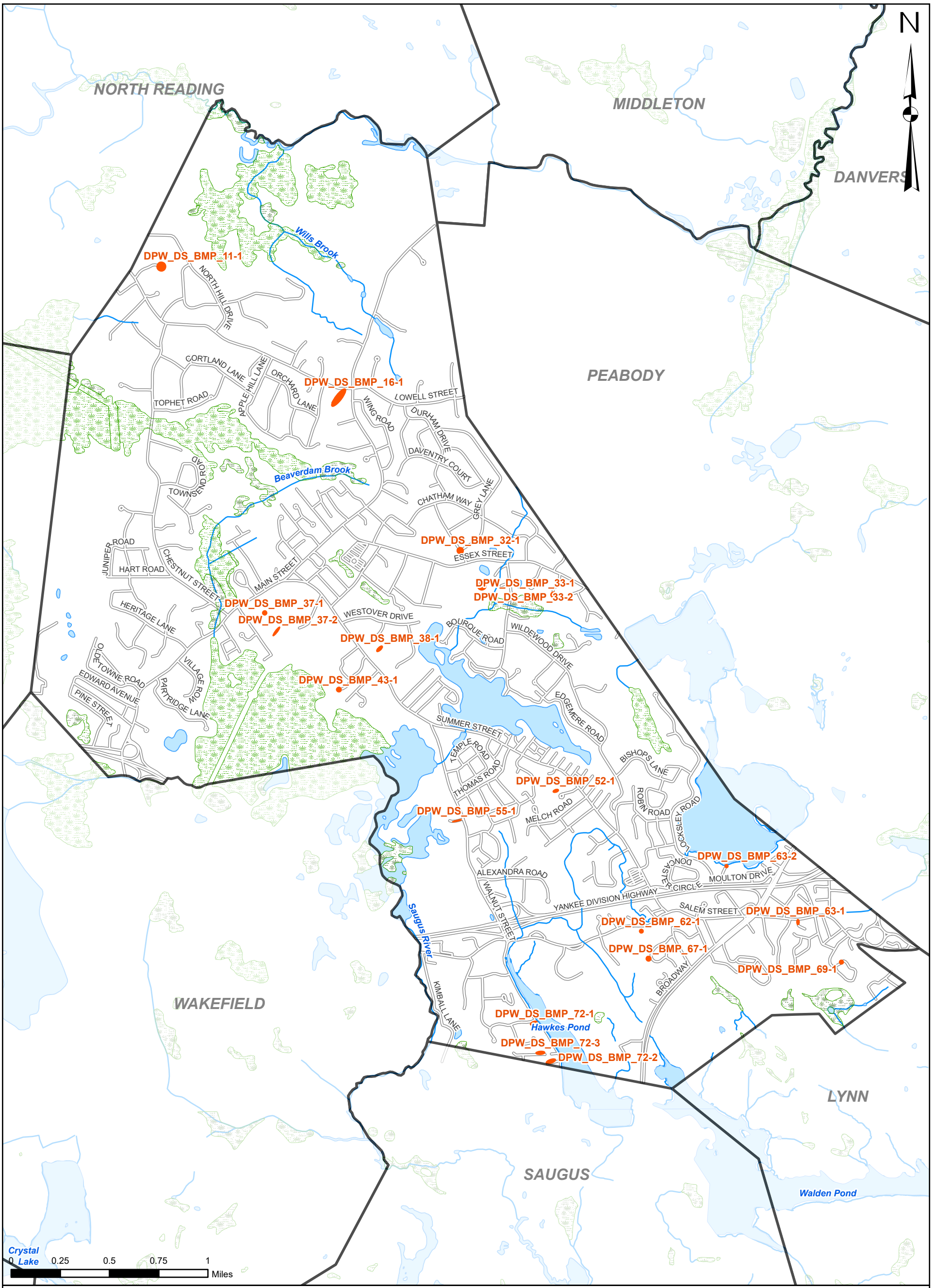
Rebecca Balke, P.E.
Principal, Project Manager

Attachments:

- Attachment 1. Stormwater BMP Map
- Attachment 2. Stormwater Infrastructure Inspections and Photographs

STORMWATER BMP INSPECTION REPORT

Attachment 1.
Stormwater BMP Map



Legend

- Town-Owned BMPs
- Roads
- Lake, Pond, Reservoir
- Wetland, Marsh, Swamp
- Stream, Brook

Stormwater BMP Map

Lynnfield, MA

Comprehensive Environmental Incorporated

Data Sources: CEI, MassGIS, Town of Lynnfield

11/10/2021

STORMWATER BMP INSPECTION REPORT

Attachment 2.
Stormwater Infrastructure Inspections and Photographs

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 Lynnfield

EPA NPDES Permit Number: MAR041045

Primary MS4 Program Manager Contact Information

Name: John Tomasz Title: DPW Director

Street Address Line 1: 55 Summer Street

Street Address Line 2: na

City: Lynnfield State: MA Zip Code: 01940

Email: dpw@town.lynnfield.ma.us Phone Number: (781) 334-9500

Fax Number: na

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.town.lynnfield.ma.us/department-public-works/pages/stormwater-management

Date SWMP was Last Updated: June 30, 2019

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

Part II: Self Assessment

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

Impairment(s)

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

TMDL(s)

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

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

Clear Impairments and TMDLs

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

Year 1 Requirements

- ☒ Develop and begin public education and outreach program
- ☐ Identify and develop inventory of all known locations where SSOs have discharged to the MS4 in the last 5 years
  - ○ The SSO inventory is attached to the email submission
  - ○ The SSO inventory can be found at the following website:
- ☒ Develop written IDDE plan including a procedure for screening and sampling outfalls
- ☒ IDDE ordinance complete
- ☒ Identify each outfall and interconnection discharging from MS4, classify into the relevant category, and priority rank each catchment for investigation
  - ○ The priority ranking of outfalls/interconnections is attached to the email submission
  - ◉ The priority ranking of outfalls/interconnections can be found at the following website:

    Appendix B of IDDE Plan at: https://www.town.lynnfield.ma.us/department-public-works/pages/stormwater-management
- ☒ Construction/ Erosion and Sediment Control (ESC) ordinance complete
- ☒ Develop written procedures for site inspections and enforcement of sediment and erosion control measures
- ☒ Develop written procedures for site plan review
- ☒ Keep a log of catch basins cleaned or inspected
- ☒ Complete inspection of all stormwater treatment structures

Annual Requirements

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

Annual Requirements

*Public Education and Outreach**

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

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

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

SSO Inventory - Not applicable because the entire town relies on septic systems.

IDDE Training - An employee IDDE Training program will be developed during Year 2, with annual training to be performed starting in Year 2. Training will correspond with the start of outfall inspection activities.

Public Education and Outreach - During Year 1, the Town developed an education program including message materials and a schedule for distribution. The Town began implementation of this program through the update of its website in June 2019, while continuing educational messages through public access television. The Town plans to fully implement its education outreach program in Year 2 and will be contracting with Greenscapes to help meet this requirement.

Increased Street Sweeping - The Town routinely sweeps all streets in Town a minimum of once a year after snowmelt. The Town prepared a street sweeping plan as part of its SWMP based on the location of impaired

waters within Town. Increased sweeping in impaired watersheds will begin in Year 2. A minimum of twice a year will occur in phosphorus and nitrogen impaired watersheds. A minimum of once a year will occur in turbidity impaired watersheds (this will be increased if increased sedimentation is observed in relation to other areas within Town).

Potential Structural BMPs - Existing BMPs have been identified and inspected. These will be reviewed further for potential phosphorus and nitrogen removal amounts where applicable.

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:

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: 4

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: Public Access Television

Message Description and Distribution Method:

Three messages are run on local public access television during the months of April through November. These include: 1) Please don't dump hazardous waste into our drains. All catch basins lead to waterways and wetlands!; 2) Minimize the amount of fertilizer you use on your lawn. Heavy use of fertilizer can damage our waterways and wetlands!; and 3) When walking your pets, please do not dump pet waste into town storm drains. All drains flow into our waterways!

Targeted Audience: Residents, Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW

Measurable Goal(s):

Messages displayed between programs spring through fall.

Message Date(s): April - November every year

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

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

If yes, describe why the change was made:

Public access television offers another avenue for reaching residents and businesses within Town.

BMP: Web Outreach to Residents

Message Description and Distribution Method:

Lynnfield developed a webpage dedicated to Stormwater Management. The webpage outlines causes of stormwater pollution, actions that can be taken to prevent pollution and links to various public awareness materials geared towards various audiences. Residential awareness information includes: 1) a pet waste management brochure; 2) a brochure on how citizens can can reduce their impact on stormwater and the environment, which includes tips on landscaping, septic system maintenance, automobile care, pet waste management and household waste; and 3) a flyer on fertilizing lawns to reduce pollution.

Targeted Audience: Residents

Responsible Department/Parties: DPW and Information Technology

Measurable Goal(s):

Website updated June 2019.

Message Date(s): Website updated June 2019 with information available continuously.

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: Web Outreach to Business, Institutions and Commercial Facilities

Message Description and Distribution Method:

Business awareness information was added to Lynnfield's webpage and includes: 1) Think Blue Massachusetts flyer on "Lawn and Garden Tips to Help Curb Stormwater Pollution"; 2) Think Blue Massachusetts flyer on "Keep Pollution at Bay - One Parking Lot at a Time"; and 3) Think Blue Massachusetts flyer on "Put Waste in its Place for Clean Water in Lynnfield". Businesses can also access other educational materials posted for residents and developers

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW and Information Technology

Measurable Goal(s):

Website updated June 2019.

Message Date(s): Website updated June 2019 with information available continuously.

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: Web Outreach to Developers

Message Description and Distribution Method:

Developer awareness information was added to Lynnfield's webpage and includes: 1) Think Blue Massachusetts flyer on "Stop Erosion in its Tracks to Keep Our Waters Clean"; 2) Builder's Guide to Low Impact Development; 3) EPA's "What you can do as a Developer"; and 4) information on the applicability of the NPDES Construction General Permit (CGP).

Targeted Audience: Developers (construction)

Responsible Department/Parties: DPW and Information Technology

Measurable Goal(s):

Website updated June 2019.

Message Date(s): Website updated June 2019 with information available continuously.

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

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

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

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

SWMP Plan for Download - The Town has posted the SWMP Plan on Town website along with contact information to allow for public comment.

Annual household hazardous waste/used oil collection.

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:

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: N/A

Number of SSOs removed: N/A

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: N/A

Total number of SSOs removed: N/A

MS4 System Mapping

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

The Town has mapped all known outfalls and receiving waters including impairments, municipally owned structural BMPs, initial outfall catchment delineations, manholes and catch basins. Initial mapping of pipe connectivity has also been performed. All data is included in the Town's GIS database. The Town will work toward identifying any interconnections with other towns, and open channel conveyances in Permit Year 2.

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:

N/A - none completed to date

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: 0

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:

N/A - none completed to date

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

Number of catchment investigations completed this reporting period: 0

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

Percent of total catchments investigated: 0

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

N/A - not started yet

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 illicit discharges found

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: N/A [UNITS]

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

Total number of illicit discharges identified: 0

Total number of illicit discharges removed: 0

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

N/A

Employee Training

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

An employee IDDE Training program will be developed during Year 2, with annual training to be performed starting in Year 2.

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: 62

Number of enforcement actions taken: 2

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:

The Town has a Stormwater Management bylaw (Chapter 213 Stormwater Management) and Stormwater Rules and Regulations that address construction and post-construction requirements for developments and redevelopments greater than or equal to 1 acre. This will be updated to meet MS4 Permit requirements in Permit Year 2.

As-built Drawings

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

The Town currently requires the submission of as-built record drawings of all structural stormwater controls and treatment best management practices required for the site at the completion of a construction project. The Town also requires submission of an O&M Plan and an annual certification from a Registered Professional Engineer (P.E.) that maintenance is being performed. These requirements will be reviewed and modified as needed with Year 2 updates.

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:

No work completed in Year 1. To be completed in future years.

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:

No work completed in Year 1. To be completed in future years.

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:

No work completed in Year 1. To be completed in future years, upon completion of an inventory of Town-owned property.

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

A plan for optimizing catch basin cleaning was completed and included as Appendix G to the SWMP. The Plar

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:

  The Catch Basin Cleaning Optimization Plan is included as Appendix G of the SWMP at: https://www.town.lynnfield.ma.us/department-public-works/pages/stormwater-management

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: 1,647

Number of catch basins cleaned: 1,647

Total volume or mass of material removed from all catch basins: 210 cy

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

Total number of catch basins: ~1,647

If applicable:

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

Not yet applicable, pending collection of a second round of catch basin inspections.

Street Sweeping

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

The Town developed a street sweeping map showing sweeping requirements throughout Town based on the location of impaired waters. A street sweeping SOP was also developed and will be included as part of a larger comprehensive Operation and Maintenance (O&M) Plan during Year 2 that covers other facilities and stormwater infrastructure.

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

- (●) Number of miles cleaned: 85
- ( ) Volume of material removed: [UNITS]
- ( ) Weight of material removed: [UNITS]

If applicable:

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

DPW personnel observe all regulated town-owned roadways for maintenance needs, including street sweeping, during routine operations. Personnel also observe suspect trouble areas, such as large-scale construction projects or projects with substantial land disturbance, for evidence of runoff-laden sediment onto roadways that may require more frequent sweeping in addition to that outlined under the Street Sweeping SOP. Should areas in need of additional sweeping be observed, the Town will document these areas and schedule additional sweeping as needed. Note that the Town does not apply sand to roadways during winter operations, and thus observed sweeping needs are typically minimal. Inspections of rural uncurbed roadways conducted to date have not yet observed any needs for additional sweeping within regulated urbanized area roadways.

Winter Road Maintenance

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

The Town developed an SOP for winter road maintenance during Year 1. The SOP will be included as part of a larger comprehensive Operation and Maintenance (O&M) Plan during Year 2 that covers other facilities and stormwater infrastructure.

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:

No work completed in Year 1. The Town will develop an inventory by the end of Year 2.

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

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

No work completed in Year 1. To be completed in Year 2.

Stormwater Pollution Prevention Plan (SWPPP)

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

No work completed in Year 1. To be completed in Year 2.

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

Number of site inspections completed: 0

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

N/A

O&M Procedures for Stormwater Treatment Structures

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

Inventory and inspection of all Town-owned BMPs was conducted in Year 1. An inspection report including completed inspection forms, photos, and maintenance needs for each BMP was prepared.

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:

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:

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: John Tomasz Digitally signed by John Tomasz DN: cn=John Tomasz, o=Town of Lynnfield, ou=Department of Public Works, email=jtomasz@town.lynnfield.ma.us, c=US Date: 2019.09.30 14:46:02 -04'00'

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 Lynnfield

EPA NPDES Permit Number: MAR041045

Primary MS4 Program Manager Contact Information

Name: John Tomasz Title: DPW Director

Street Address Line 1: 55 Summer Street

Street Address Line 2: na

City: Lynnfield State: MA Zip Code: 01940

Email: dpw@town.lynnfield.ma.us Phone Number: (781) 334-9500

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.town.lynnfield.ma.us/department-public-works/pages/stormwater-management

Date SWMP was Last Updated: June 30, 2019

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

Part II: Self-Assessment

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

Impairment(s)

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

TMDL(s)

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

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

Clear Impairments and TMDLs

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

Year 2 Requirements

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

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

The Town has mapped all known outfalls and receiving waters/waterbodies, known interconnections, stormwater BMPs, and completed initial catchment delineations. Additionally, most of the known catch basins, manholes, and piping have been mapped which is not required until Year 10. Mapping of open channel

conveyances and any newly located outfalls is ongoing as dry weather inspections are performed.

Annual Requirements

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

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

The outfall and interconnection inventory is updated on an ongoing basis as dry weather screening is performed. The priority ranking will be updated after dry weather inspections are completed and before catchment investigations commence.

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

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

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

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

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

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

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

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

Street Sweeping - Sweeping is performed once a year in turbidity impaired watersheds, twice a year where the watershed is also impaired for nutrients. Turbidity impaired watersheds were not observed to accumulate more sediment and debris than other areas within the Town, therefore the current sweeping schedule is deemed adequate.

Catch Basin Cleaning - The Town currently cleans all catch basins once a year. A plan for optimizing catch basin cleaning was completed in Year 1. In accordance with its plan, the Town is currently tracking sediment accumulation during its annual inspection and cleaning of catch basins using a GIS based platform. The data will be used to determine if certain structures/areas require more frequent cleaning and to update the prioritization plan as needed for future years.

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 2016 Integrated List of Waters was finalized and includes the following new or removed impairments and/or TMDLs in Lynnfield:

-Hawkes Brook (MA93-32) has a TMDL for E.Coli (previously just fecal coliform)
-Saugus River (MA93-35) has a TMDL for E.Coli (previously just fecal coliform)
-Beaverdam Brook (MA93-30) has a TMDL for E.Coli (previously just fecal coliform)
-Wills Brook (MA92-10) - fecal coliform impairment removed

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**: 13

*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: Greenscapes Guide

Message Description and Distribution Method:

Comprehensive 24 page magazine, describing sustainable landscaping practices, DIY residential stormwater management projects, native plant suggestions, reducing chemical use, composting and more! Mailed to 139 Pillings Pond abutters along with a "Protecting Pillings Pond" brochure. Copies also stocked in pamphlet and newsletter corral at Town Hall and posted on Town website. Green Grass & Clear Water fact sheet also available online.

Targeted Audience: Residents

Responsible Department/Parties: Greenscapes North Shore Coalition & DPW

Measurable Goal(s):

Greenscapes Guide posted on Lynnfield's website April 26, 2020 and mailed to 139 households in June 2020. Green Grass & Clear Water fact sheet continuously available on website.

Message Date(s): Posted online April 2020. Mailing on June 26, 2020. Continuously available on website.

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 Conservation

Message Description and Distribution Method:

The Town published "Simple Indoor Water-Saving Measures for Everyone!" Greenscapes Winter 2020 Newsletter and "Let's start the conversation! FREE "Talking About Water Workshop" Greenscapes event invitation on the Conservation Commission webpage.

Targeted Audience: Residents

Responsible Department/Parties: Greenscapes North Shore Coalition, DPW and Conservation Commission

Measurable Goal(s):

Posts in January 2019.

Message Date(s): Indoor water saving tips posed on January 15, 2020. Water Workshop posted on January 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:

Water conservation was not a topic outlined in the NOI. Provided as supplemental education.

BMP: Management of Fall Leaves

Message Description and Distribution Method:

"Please keep fall leaves out of streets and away from wetlands." published on Conservation Commission webpage on October 29, 2019 including "Be a Leaf Hero" publication. "It's Time for Fall Greenscaping Your Yard!" press release and published on Conservation Commission webpage October 1, 2019 with publication from Greenscapes "Fall Greenscaping".

Targeted Audience: Residents

Responsible Department/Parties: Greenscapes North Shore Coalition, DPW and Conservation Commission

Measurable Goal(s):

Posted in Fall 2019.

Message Date(s): October 29, 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 Outreach

Message Description and Distribution Method:

"Always 'Scoop the Poop'! Dog Poop Belongs in the Trash" 1-minute video posted to Stormwater Management and ConCom webpages on January 19, 2020. Greenscapes "Scoop It" flier given out or mailed out from the Lynnfield Town Clerk's office to all residents requesting 2020 dog licenses as of December 2, 2019. Dog waste brochure available on Town website.

Targeted Audience: Residents

Responsible Department/Parties: Greenscapes North Shore Coalition, DPW, Conservation Commission and To

Measurable Goal(s):

Distributed pet waste education with all dog licenses.

Message Date(s): December 2, 2019 began distribution with dog licenses. Posted materials January 2020. Materials continuously available on website.

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: Lawn Care Outreach

Message Description and Distribution Method:

"Lynnfield Initiates Organic Lawn Care Program on Town Common" press release on Town website and published on Conservation Commission webpage on November 19, 2019. Describes how the Town will use organic treatment measures to maintain the new lawn on the Town Common and monitor the effectiveness and expected cost savings. Serves as a demonstration project for residents and businesses in Town.

Targeted Audience: Residents, Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Conservation Commission

Measurable Goal(s):

Posted in November 2019.

Message Date(s): November 19, 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:

The Town replaced the septic system on the Town Common and decided to try organic treatment measures for the lawn. Serves as a demonstration project for others and supplements the residential and business outreach program.

BMP: Septic Maintenance Outreach

Message Description and Distribution Method:

"Do Your Part-Be Septic Smart" EPA flier photocopied and made available for the public at BOH office.

Newsblog - "Properly maintained, your septic system benefits your family and the environment" posted 2/26/2020.

Targeted Audience: Residents

Responsible Department/Parties: DPW, BOH

Measurable Goal(s):

Newsblog posted February 2020.

Message Date(s): Flyer continuously available. Newsblog posted February 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: Clean Water Outreach

Message Description and Distribution Method:

Newsblog - advance announcement - "Lynnfield's 5th Graders to participate in 2-day 'Keeping Water Clean' program posted to Stormwater Management webpage on February 3, 2020. Public service announcement "How can we all keep Lynnfield stormwater clean"? 2 minute video running on vimeo indefinitely beginning November 18, 2019.

Targeted Audience: Residents

Responsible Department/Parties: DPW

Measurable Goal(s):

Posts in November 2019 and February 2020.

Message Date(s): Newsblog February 3, 2020. Video posted on November 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: Benefits of Trees Outreach

Message Description and Distribution Method:

Newsblog - "Protect your investment in your trees. Avoid "Mulch Volcanos"! posted to Town home page,

Conservation webpage and reprinted in local newspapers on June 7, 2020.

Targeted Audience: Residents

Responsible Department/Parties: DPW and Conservation Commission

Measurable Goal(s):

Posted on website and printed June 7, 2020.

Message Date(s): June 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:

Topic not in NOI. Added to supplement residential outreach program.

BMP: BMP Maintenance Reminders

Message Description and Distribution Method:

Stormwater inspection report - 2018 and 2019 letters sent to all residents and commercial property owners having stormwater structures, requesting required annual inspection reports.

Targeted Audience: Residents, Businesses, institutions and commercial facilitiis

Responsible Department/Parties: DPW

Measurable Goal(s):

Mailing to all known BMP owners.

Message Date(s): 2018 and 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:

Not outlined in NOI. Important to educate and remind property owners of their responsibilities to maintain stormwater treatment BMPs.

BMP: ThinkBlueMA "Fowl Water" Video

Message Description and Distribution Method:

Think Blue Massachusetts "Fowl Water" video defines stormwater and explains the impact that pollution like

trash, oil, cigarettes and dog poop can have on stormwater and our waterways. Video available at https://www.thinkbluemassachusetts.org/, www.greenscapes.org/resources-videos/ and spread as an advertisement on Facebook, Instagram, & YouTube.

Targeted Audience: Residents, Businesses, institutions and commercial facilities

Responsible Department/Parties: ThinkBlueMA, Greenscapes North Shore Coalition

Measurable Goal(s):

37,982 impressions (20,580 views on Facebook & Instagram, 17,402 views on Youtube)

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

Not described in NOI. Supplemental to expected resident outreach.

BMP: Web Outreach to Residents

Message Description and Distribution Method:

Lynnfield developed a webpage dedicated to Stormwater Management. The webpage outlines causes of stormwater pollution, actions that can be taken to prevent pollution and links to various public awareness materials geared towards various audiences. Residential awareness information includes: 1) a pet waste management brochure; 2) a brochure on how citizens can can reduce their impact on stormwater and the environment, which includes tips on landscaping, septic system maintenance, automobile care, pet waste management and household waste; and 3) a flyer on fertilizing lawns to reduce pollution.

Targeted Audience: Residents

Responsible Department/Parties: DPW

Measurable Goal(s):

Webiste updated June 2019.

Message Date(s): Continuously available.

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: Web Outreach to Businesses, Institutions and Commercial Facilities

Message Description and Distribution Method:

Business awareness information was added to Lynnfield's webpage and includes: 1) Think Blue Massachusetts flyer on "Lawn and Garden Tips to Help Curb Stormwater Pollution"; 2) Think Blue Massachusetts flyer on "Keep Pollution at Bay - One Parking Lot at a Time"; and 3) Think Blue Massachusetts flyer on "Put Waste in its Place for Clean Water in Lynnfield". Businesses can also access other educational materials posted for residents and developers.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW

Measurable Goal(s):

Website updated June 2019.

Message Date(s): Continuously available.

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: Web Outreach to Developers

Message Description and Distribution Method:

Developer awareness information was added to Lynnfield's webpage and includes: 1) Think Blue Massachusetts flyer on "Stop Erosion in its Tracks to Keep Our Waters Clean"; 2) Builder's Guide to Low Impact Development; 3) EPA's "What you can do as a Developer"; and 4) information on the applicability of the NPDES Construction General Permit (CGP).

Targeted Audience: Developers (construction)

Responsible Department/Parties: Greenscapes North Shore Coalition

Measurable Goal(s):

Website updated June 2019.

Message Date(s): Continuously available.

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**:

SWMP Plan for Download - The Town has posted the SWMP Plan on Town website along with contact information to allow for public comment.

Annual household hazardous waste/used oil collection.

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**:

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:

The Town has mapped all known outfalls and receiving waters/waterbodies, known interconnections, stormwater BMPs, and completed initial catchment delineations. Additionally, most of the known catch basins, manholes, and piping have been mapped which is not required until Year 10. Mapping of open channel conveyances and any newly located outfalls is ongoing as dry weather inspections are performed.

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: 127

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:

No catchment investigations performed this period.

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:

No illicit discharges found this period.

Employee Training

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

IDDE training was performed on January 8, 2020 and included background information on stormwater pollution, MS4 requirements, illicit discharge program requirements and investigations and general good housekeeping practices.

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: 7

Number of enforcement actions taken: 0

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

The Town is performing ongoing periodic inspections for seven active construction projects. Inspections are performed by Town staff or by the Town's third party inspector.

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:

The Town currently requires the submission of as-built record drawings of all structural stormwater controls and treatment best management practices required for the site at the completion of a construction project. The Town also requires submission of an O&M Plan and an annual certification from a Registered Professional Engineer (P.E.) that maintenance is being performed.

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:

N/A, to be completed during future permit years.

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:

N/A, to be completed during future permit years.

Retrofit Properties Inventory

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

The Town completed an inventory of its permittee-owned properties. Facilities will be evaluated for potential BMP retrofit opportunities during future permit years.

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: 1,713

Number of catch basins cleaned: 1,713

Total volume or mass of material removed from all catch basins: 220 cubic yards

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

Total number of catch basins: 1,713

If applicable:

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

The Town is currently collecting data during its annual cleaning to determine whether any structures fill more than 50% between cleaning cycles and will update its catch basin cleaning prioritization plan once data has been collected and reviewed for trends.

Street Sweeping

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

- (●) Number of miles cleaned: 132
- ( ) 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: 0

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

SWPPP developed at the end of Permit Year 2. SWPPP inspections will begin in Permit Year 3.

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:

Catch basin cleaning - the town cleaned all 1,713 known catch basins within Town. The Town is using a GIS-based platform to track the location and number of catch basins cleaned each year. This information will be used to refine the total town-owned catch basins as the data is collected.

Street sweeping - All 85 road miles were swept in the Spring. The 47 road miles located within a nutrient impaired watershed were swept again in the Fall.

COVID-19 Impacts

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

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 3 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

- Inspect all outfalls/ interconnections (excluding Problem and Excluded outfalls) for the presence of dry weather flow
- Complete follow-up ranking as dry weather screening becomes available

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected

- Sweep all uncurbed streets at least annually
- Continue investigations of catchments associated with Problem Outfalls
- Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary

Provide any additional details on activities planned for permit year 3 below:

Part V: Certification of Small MS4 Annual Report 2020

40 CFR 144.32(d) Certification

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

Name: Robert Dolan Title: Town Administrator

Signature: Robert Dolan Digitally signed by Robert Dolan DN: cn=Robert Dolan, o=Town of Lynnfield, ou=Town Admidstrator, email=rdolan@town.lynnfield.ma.us, c=US Date: 2020.09.28 17:22:34 -04'00' 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: laura.schifman@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

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 Lynnfield

EPA NPDES Permit Number: MAR041045

Primary MS4 Program Manager Contact Information

Name: John Tomasz Title: DPW Director

Street Address Line 1: 55 Summer Street

Street Address Line 2: na

City: Lynnfield State: MA Zip Code: 01940

Email: dpw@town.lynnfield.ma.us Phone Number: (781) 334-9500

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.town.lynnfield.ma.us/stormwater-management

Date SWMP was Last Updated: September 2021

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

Part II: Self-Assessment

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

Impairment(s)

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

TMDL(s)

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

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

Clear Impairments and TMDLs

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

Year 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:

-Dry Weather Outfall Screening - The Town has attempted to inspect 264 stormwater outfalls within the urbanized area during dry weather. In most cases where an outfall could not be found, the location was revisited again when there was less vegetation. In the event it still could not be located, or was inaccessible, the upgradient catch basin or manhole was inspected for dry weather flows as a proxy. Five of the 264 outfalls that could not be found/accessed and the four interconnections require an additional visit in Year 4 to complete screening. There were also three locations where there was insufficient flow to sample and/or the pipe was submerged and the upgradient structure could not be opened. These will also be revisited in Year 4. The Town has also identified data gaps in the MS4 mapping and is working on reconciling these. Any additional outfalls identified through this process will be screened as found.

-Update Outfall Inventory and Priority Ranking - A new prioritization table and map was created.

-Post-Construction Bylaw and Regulations: The Town updated its Stormwater Management (MS4) By-Law,

which was adopted June 12, 2021. Updates to the Stormwater Rules and Regulations were approved in August 2021. The Town has updated its Suvdivision Regulations and Wetland Bylaw for consistency, which are in the process of being approved and adopted.

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:

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

Annual Requirements

*Public Education and Outreach**

☒ Annual message was distributed encouraging the proper management of pet waste, including noting any existing ordinances where appropriate

☒ Permittee or its agents disseminated educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time

☒ Provided information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

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

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

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

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

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

Annual Requirements

*Public Education and Outreach**

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

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

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

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Potential structural BMPs

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

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

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

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

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

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

Street Sweeping - Sweeping is performed once a year in turbidity impaired watersheds, twice a year where the

watershed is also impaired for nutrients. Turbidity impaired watersheds were not observed to accumulate more sediment and debris than other areas within the Town, therefore the current sweeping schedule is deemed adequate.

Catch Basin Cleaning - The Town currently cleans all catch basins once a year. A plan for optimizing catch basin cleaning was completed in Year 1. In accordance with its plan, the Town is currently tracking sediment accumulation during its annual inspection and cleaning of catch basins using a GIS based platform. One year of catch basin inspections has been completed using the GIS based platform. This also allowed for more accurate mapping of the Town's stormwater infrastructure. Once a second year of data becomes available, the data will be used to determine if certain structures/areas require more frequent cleaning and to update the prioritization plan as needed for future years.

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 2016 Integrated List of Waters was finalized and includes the following new or removed impairments and/or TMDLs in Lynnfield:

-Hawkes Brook (MA93-32) has a TMDL for E.Coli (previously just fecal coliform)
-Saugus River (MA93-35) has a TMDL for E.Coli (previously just fecal coliform)
-Beaverdam Brook (MA93-30) has a TMDL for E.Coli (previously just fecal coliform)
-Wills Brook (MA92-10) - fecal coliform impairment removed

The Town also updated its list of outfalls and receiving waters as new outfalls were found during the dry weather screening. The inspection results are attached to this annual report and a list and updated prioritization are also kept with the Town's IDDE Plan.

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**: 12

*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: Benefits of Trees Outreach

Message Description and Distribution Method:

The initial press release titled "Planning Board Works to Develop Tree Protection Bylaw" was submitted to local newspapers on 8/24/2020 for immediate release. Newsblog "Studies suggest old large trees are best at absorbing carbon" posted on September 15, 2020. Newsblog "Does money grow on trees?" posted on September 27, 2020. Press release and Newsblog "The Popular Lynnfield "Tree-O-Cache" Tree Treasure Hunt Continues!" as sponsored by the Tree Committee was submitted to local newspapers on 10/1/2020 for immediate release. Newsblog "Planners Eye Revised Tree Bylaw for Spring Town Meeting. Residents weigh in on proposed changes at Jan. 13 public forum" posted January 23, 2021. Press release "When it comes to trees – bigger is better for carbon capture! Carbon capture is most efficient in big trees." posted on March 31, 2021. This press release kicked off a regularly appearing column in one of the two local newspapers. Press release "Lynnfield earns Arbor Day Foundation's Prestigious GROWTH AWARD. 2020 award adds to over 10 years' Tree City designation" posted on April 5, 2021. Press release "Tree Committee Launches 1,000 TREES Project. Calling Lynnfield residents, young and old!" posted on April 10, 2021. Press release and newsblog "Our Native Oak Trees – environmentally, our biggest bang for the buck. Plant new (or, even better) keep your Oak Trees!" posted April 14, 2021. Newsblog and press release "Getting too hot out there? Think trees! Tree cover reduces your energy costs, improves your air quality and helps manage stormwater" posted on June 14, 2021. Newsblog and column press release "Forest Carbon offsets and Carbon credits. Perhaps a program coming to a forest near you?" posted on June 29, 2021.

Targeted Audience: Residents

Responsible Department/Parties: DPW, Conservation Commission

Measurable Goal(s):

Combination of newsblogs and press releases posted August 2020, September 2020, October 2020, January 2021, March 2021, April 2021, and June 2021.

Message Date(s): 8/24/2020, 9/15/2020, 9/27/2020, 10/1/2020, 1/23/2021, 3/31/2021, 4/5/2021, 4/10/2021, 4/14/2021, 6/14/2021, 6/29/2021

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:

Lynnfield launched a new education campaign in support of a proposed Tree Protection Bylaw. The campaign

highlights the benefits trees provide to the environment.

BMP: Septic Maintenance Outreach

Message Description and Distribution Method:

"Do Your Part-Be Septic Smart" EPA flyer made available to Town Hall visitors. Newsblog - “Your well-maintained septic system protects public health, water resources and your wallet!” posted 9/17/2020.

Targeted Audience: Residents

Responsible Department/Parties: DPW, BOH, Town Hall

Measurable Goal(s):

Newsblog posted 9/17/2020

Message Date(s): Flyer continuously available. Newsblog posted September 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: Lawn Care Outreach

Message Description and Distribution Method:

Press release “Update - Organic Lawn Care Program for Town Common!” posted on Town website and submitted to local newspapers for immediate release on October 4, 2020. Press release described how the Town will use organic treatment measures to maintain the new lawn on the Town Common and serves as a demonstration project for residents and businesses in Town. Press release and newsblog “Town Common ready for new organic lawn! Over an acre of sod to be installed and ready for Spring.” posted on November 10, 2020. Newsblog “Lawn care – Here’s everything you need - early Spring to late Fall! From our partner GREENSCAPES - a 1-page flyer to download” posted on April 22, 2021. Tri-fold brochure “Your Grass – Beautiful and Healthy!” was produced in-house with content provided by GREENSCAPES and brochures were replicated for Town Hall card rack and Lynnfield Public Library. The brochure was distributed in Spring 2021. Press release and newsblog “Doug Tallamy presentation - ZOOM link here - Wed. June 2 at 7:00pm, We can restore ecosystem function in our yards” posted on May 31, 2021.

Targeted Audience: Residents, Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Conservation Commission, Greenscapes, Public Library

Measurable Goal(s):

Posted in October 2020, November 2020, April 2021, and May 2021. 40 "Your Grass - Beautiful and Healthy!" brochures delivered to Lynnfield Public Library.

Message Date(s): October 4, 2020, November 10, 2020, April 22, 2021, May 31, 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:Management of Fall Leaves

Message Description and Distribution Method:

The "Be a Leaf Hero" publication, a resource of the Cape Cod Stormwater Managers Group, was branded with the Lynnfield Stormwater link, replicated, and distributed in the Town Hall rack card and provided to the Lynnfield Public Library in Fall 2020. Newsblog “Time to Rake? Maybe not! Use (don’t dispose of) fallen leaves and grass clippings.” posted on October 18, 2020. Newsblog “Leaves that clog storm drains can be quite harmful. You can help by removing leaves from storm drains near your property!” posted on December 4, 2020.

Targeted Audience: Residents

Responsible Department/Parties: Greenscapes North Shore Coalition, DPW and Conservation Commission

Measurable Goal(s):

Posted in Fall and Winter 2020

Message Date(s): October 18, 2020, December 4, 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: Invasive Species Outreach

Message Description and Distribution Method:

Newsblog “Avoid Using Invasive Plants in Holiday Decor! Bittersweet and Multiflora Rose are aggressive invasives.” posted on October 29, 2020. Newsblog "Fall - the Perfect Time to Free Your Trees from Invasive Vines - Here's the simplest way!” posted on October 31, 2021.

Targeted Audience: Residents

Responsible Department/Parties: DPW

Measurable Goal(s):

Posted Fall 2020

Message Date(s): October 29, 2020 and October 31, 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:

To raise awareness of invasive species.

BMP: Pillings Pond Outreach

Message Description and Distribution Method:

Newsblog “Please Don't Feed the Waterfowl! Their droppings negatively affect Pillings Pond's water quality”, posted on November 6, 2020. Press release “ConCom approves test of BIOCHAR for Pillings Pond. Test will measure filtration of harmful phosphorous flow to Pond waters” posted on April 2, 2021. Press release “Volunteers gather at Pillings Pond for Planting Day! Demonstration Bank Planting project kicks off at Rotary Park site” posted on May 2, 2021.

Targeted Audience: Residents, Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW

Measurable Goal(s):

Posted November 6, 2020, April 2, 2021, and May 2, 2021

Message Date(s): November 6, 2020, April 2, 2021, May 2, 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:

To raise awareness of water quality and contributors to Pillings Pond, which is impaired with phosphorus.

BMP: Parcel Acquisition & Open Space

Message Description and Distribution Method:

Press release “ConCom Recommends Town-purchase of Richardson Green parcel to Select Board. Recommendation includes ConCom votes for starter funding and federal appraisal” posted on December 30, 2020. The vote was to place conservation restriction on 20-acre undeveloped parcel. Press release and newsblog "Lynnfield Awarded $1.6M grant for Richardson Green purchase. MVP grant award is 3rd largest fromt he State." posted September 10, 2021. Press release and newsblog "Grant Awarded for "A Vision for Willis Woods"! MAPC to provide technical assistance for regional open space vision" posted August 2, 2021.

Targeted Audience: Residents

Responsible Department/Parties: Conservation Commission

Measurable Goal(s):

Posted December 30, 2020, September 10, 2021. Willis Woods press release and newsblog posted August 2, 2021.

Message Date(s): December 30, 2020 and September 10, 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:

To raise awareness of Town efforts to preserve and conserve land.

BMP:Pet Waste Outreach

Message Description and Distribution Method:

Flier “Help keep our water clean – Throw dog waste in the trash!” was produced in house with content provided by Think Blue Massachusetts, replicated and provided to all dog owners for license renewals, beginning January of each year.

Targeted Audience: Residents

Responsible Department/Parties: Greenscapes North Shore Coalition, DPW, Conservation Commission and To

Measurable Goal(s):

Distributed pet waste education with all dog licenses, 1067 fliers sent out in 2021 (as of Sept. 18, 2021).

Message Date(s): Ongoing distribution with dog licenses. Materials continuously available on website.

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

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

If yes, describe why the change was made:

BMP:ThinkBlue MA "Stormwater" Video

Message Description and Distribution Method:

Newsblog “Stormwater - An excellent summary video here! This brief video sums it up simply!” posted on January 4, 2021 with a video from Think Blue Massachusetts.

Targeted Audience: Residents

Responsible Department/Parties: DPW and Conservation Comission

Measurable Goal(s):

Posted on website January 4, 2021

Message Date(s): January 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:

BMP:Ipswich River Video

Message Description and Distribution Method:

Press release and newsblog “John Kerry focuses climate lens on IPSWICH RIVER. Powerful remarks in YouTube video BELOW from the U.S. Special Presidential Envoy for Climate” posted on April 15, 2021.

Targeted Audience: Residents

Responsible Department/Parties: DPW

Measurable Goal(s):

Posted April 15, 2021

Message Date(s): April 15, 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:

To raise awareness of climate change and impacts to Ipswich River.

BMP:Vegetated Buffers

Message Description and Distribution Method:

Tri-fold brochure "Grow a Vegetated Buffer - How to use native plants to protect our water" produced in-house with content provided by Ipswich River Watershed Association. Brochures replicated for Town Hall card rack and Public Library.

Targeted Audience: Residents, Businesses

Responsible Department/Parties: DPW and Conservation Commission

Measurable Goal(s):

30 brochures delivered to Lynnfield Public Library.

Message Date(s): August 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:

Added as supplemental education materials to raise awareness of water protection and measures that can be taken.

BMP:Web Outreach

Message Description and Distribution Method:

Lynnfield developed a stormwater website in 2019. The website contains various education materials available for residents, businesses, institutions, commercial facilities and developers as described in the Year 2 annual report.

Targeted Audience: Residents, Businesses, institutions and commercial facilities, and Developers

Responsible Department/Parties: DPW

Measurable Goal(s):

Website developed in 2019 and updated periodically.

Message Date(s): Continuously available.

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**:

SWMP Plan for Download - The Town has posted the SWMP Plan on Town website along with contact information to allow for public comment.

Annual household hazardous waste/used oil collection held November 21, 2020.

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**:

A Town-wide survey sponsored by a citizens advocacy group regarding interest in the Town's purchase of a 20-acre parcel to protect with a conservation restriction took place in October and November 2020.

Development and installation of demonstration bank planting took place on May 1, 2021 with public invited. Publicity measures included conventional press releases and newsblogs, in addition to development of a tri-fold brochure (published) and educational sign (currently in design).

The Tree Committee launched the 1000 trees project in Spring 2021. The Tree Committee kicked off the tree photo contest in Fall 2021.

An internship project launched with UMASS Environmental Science student to analyze water quality at Pillings Pond at 3 intake sites after 3 storm events is ongoing and sampling and testing is complete.

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:

All known outfalls, stormwater BMPs, and receiving waterbodies with impairments have been mapped to date. Initial catchment delineations have also been completed based on topographic mapping and available stormwater system information. Mapping of open channel conveyances and any newly located outfalls is ongoing. Mapping interconnections with other MS4s (e.g. DOT) is ongoing, and it is expected that this will continue as part of DOT's own mapping efforts to be completed under a future TS4 permit.

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:

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

Number of outfalls screened: 112

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

Percent of outfalls screened: 96.4

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

As of June 30, 2021, the Town attempted to inspect all 264 known stormwater outfalls (includes 4 new outfalls located during inspections) within the urbanized area during dry weather. Of the 264 stormwater outfalls that were attempted to be inspected, 224 were located. 29 outfalls could not be found or accessed. Proxy inspections of the immediate upgradient structure were performed at 24 of these locations. The remaining 5 require a revisit which will be performed in Year 4, along with inspection of the four known interconnections. Mapping interconnections with other MS4s (e.g., DOT) is ongoing, and it is expected that this will continue as part of DOT's own mapping efforts to be completed under a future TS4 permit. Inspections will be performed once mapped.

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:

*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.

- (•) 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:

No illicit discharges of sewage were identified during the reporting period. There was a transformer oil spill in September 2020 due to a lightning strike. The oil flowed with rain runoff into the catch basin system. The DEP report can be found here: https://eeaonline.eea.state.ma.us/portal#!/wastesite/3-0036530.

Employee Training

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

IDDE training was performed on October 21, 2020 and included background information on stormwater pollution, MS4 requirements, illicit discharge program requirements and investigations and general good housekeeping practices.

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: 6

Number of inspections completed: 45

Number of enforcement actions taken: 0

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

No enforcement actions were taken, only field modifications.

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: 3

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:

N/A, to be completed during Year 4.

Green Infrastructure Report

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

N/A, to be completed during Year 4.

Retrofit Properties Inventory

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

N/A, to be completed during Year 4.

MCM6: Good Housekeeping

Catch Basin Cleaning

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

Number of catch basins inspected: 1,713

Number of catch basins cleaned: 1,713

Total volume or mass of material removed from all catch basins: 220 cubic yards

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

Total number of catch basins: 1,713

If applicable:

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

The Town is currently collecting data during its annual cleaning to determine whether any structures fill more than 50% between cleaning cycles and will update its catch basin cleaning prioritization plan once data has been collected and reviewed for trends.

Street Sweeping

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

- (●) Number of miles cleaned: 132
- ( ) 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: 3

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

The Town hires a consultant to perform formal, written quarterly SWPPP inspection. The Permit Year 3 contract was not executed until December 2020. Town personnel perform informal inspections when on site. No corrective actions were taken at the facility this period.

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:

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: *Robert Dolan* Title: *Town Administrator*

Signature: Date: 9/28/21

[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: MassDEP:

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

SWMP Plan Revision Log

Revision Date	Section Revised	Revisions Made	Revisions Made by
September 29, 2021	1. Section 1.4 2. Section 1.5 3. Section 2.3 & 9 4. Section 2.4 5. Tables 5-1, 6-1, 7-1 & 8-1 6. Table 11-1 7. Appendices	1. Section 1.4: Added reference that SWPPP is prepared as separate document. 2. Section 1.5: Program Responsibilities updated with new contact information. 3. Section 2.3 & 9: Updated impaired waters, Table 2-1, 9-1 & 9-2. Removed Section 9.3.3 (bacteria water quality limited waterbody requirements) and renumbered remaining sections. 4. Section 2.4: Added new section 2.4 Measures to Protect Drinking Water Supplies and renumbered remaining sections. 5. Tables 5-1, 6-1, 7-1 & 8-1: Made progress updates/clarifications. 6. Table 11-1: Removed references to Wills Pond impairment since it was removed from 303d list. 7. Appendix B: Updated impaired waters table and map (changes highlighted in table). Appendix C: Added updated regulations. Appendix D: Updated stormwater map (changes include the correction of outfalls based on dry weather screening and the assignment of ownership to catch basins). Appendix E: Added inventory and map of Town-owned property. Appendix F: Removed Appendix F SWPPP Evaluations and renumbered remaining. Also updated throughout text. Appendix H: Added Year 1 and 2 BMP inspection results. Appendix I: Added 2019, 2020, and 2021 Annual Reports. Appendix J: Added SWMP Plan Revision Log	A. Huffman & R. Balke, CEI
November 23, 2021	1. Appendices	1. Appendix H: Added Year 3 BMP inspection results.	R. Balke, CEI