

Stormwater Management Program (SWMP) Plan

Town of Hadley, Massachusetts

**Prepared June 30, 2019
Revised July 7, 2021**

Prepared For:

Town of Hadley
230 Middle Street
P.O. Box 406
Hadley, MA 01035



Prepared By:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740



Stormwater Management Program (SWMP) Plan Revision Log

Revision Date	Section(s) Revised	Revisions Made	Revisions Made by
June 30, 2019	All	Original SWMP Plan prepared.	Nick Cristofori, CEI
July 7, 2021	All	SWMP Plan amended to document work completed during Permit Year 2 and Permit Year 3.	Nick Cristofori, CEI

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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 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 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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Appendix D – Inventory of Town-Owned Property
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Appendix F – Catch Basin Optimization Plan
Appendix G – List of Stormwater BMPs
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1 Introduction

Hadley 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 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 are being 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 the United States Environmental Protection Agency'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 Municipal Separate Storm Sewer Systems in urbanized areas, through the use of National Pollutant Discharge Elimination System 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 USEPA's 2016 NPDES General Permit for Stormwater Discharges from MS4 in Massachusetts, hereafter referred to as the "2016 Massachusetts MS4 Permit", "2016 Permit", "MS4 Permit, and/or "2016 MS4 Permit" which replaces the 2003 MS4 Permit.

The 2016 Massachusetts MS4 Permit was signed on April 4, 2016 with an original effective date of July 1, 2017, however was postponed by 1 year to a new 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 for Massachusetts permittees. After several years of litigation, the permit was updated in December 2020 with a revised effective date of January 6, 2021. Authorization to discharge expires at June 30,

2022. The following sections outline how the Town of Hadley is meeting Phase II regulatory and schedule requirements.

1.2 MS4 Program

As required by the 2016 MS4 Permit, The Town of Hadley submitted a Notice of Intent (NOI) and required accompanying information, including endangered species, historic preservation, and an outfall map to EPA Region 1 by the September 28, 2018 deadline (**Appendix A**) requesting authorization to discharge under the new permit. Hadley received official authorization to discharge stormwater from its MS4 on February 14, 2019. Authorization to discharge expires at June 30, 2022.

This Stormwater Management Program Plan has been developed by the Town of Hadley to address the requirements of the 2016 MS4 Permit as a follow-up to the NOI. This SWMP Plan documents the Town of Hadley's program, including Best Management Practices, 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 should be updated and/or modified as required during the permit term as the permittee's activities are modified, changed or updated to meet permit conditions during the permit term.

This permit in part requires that each permittee, or regulated community, address 6 Minimum Control Measures (MCMs). These measures include the following:

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

In addition to the 6 MCMs above, 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.

1.3 Regulated Area

Requirements of the 2016 MS4 Permit are limited to a regulated area, defined as the Town's Urbanized Areas (UAs) 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. **Figure 1-1** shows the UA, which covers the more developed central area of the Town, stretching slightly northeast and southwest, and generally excludes the more forested and agricultural portions of the Town. Per the most recent census data, the UA covers 2,918 people out of the total Town population of 5,250 or approximately 56% of the population. The UA area increased moderately since the 2000 Census, generally including expanded areas in the northeast and southeast portions of the previous UA. The UA is subject to change every 10 years based on the application of the Census definition, thus a larger area may be covered in the future.

1.4 How to Use this Plan

For the purposes of the 2016 MS4 Permit and ease of use, the Town’s SWMP encompasses 6 separate written documents:

1. SWMP Plan (this document);
2. Illicit Discharge Detection and Elimination (IDDE) Plan (standalone document);
3. Operation and Maintenance (O&M) Plan (standalone document);
4. Stormwater Pollution Prevention Plan (SWPPP) (standalone document);
5. Lake and Pond Phosphorus Control Plan (LPCP) (standalone document); and
6. Nitrogen Source Identification Report (standalone document).

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. Section 5 discusses activities to comply with this measure. |

- 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 1 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 1 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 operations at specific facilities and those that occur throughout the Town (i.e., catch basin cleaning and street sweeping) and make improvements where needed to minimize pollution to stormwater runoff. Staff involved in these operations must also be trained on appropriate operations and maintenance techniques. Section 8 discusses activities to comply with this measure.
- 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 BMPs outlined in Sections 3 through 9 in a concise plan for easy reference.

1.5 Program Responsibilities

This plan is intended to be used by staff whose job involves administering the MS4 permit and associated requirements. The MS4 program is headed by the following personnel:

Table 1-1. MS4 Responsible Personnel

Name	Title, Department	Contact
Chris Okafor	Public Works Director	(413) 586-2390, okaforc@hadleyma.org
Carolyn Brennan	Town Administrator	(413) 586-0221, townadmin@hadleyma.org

The Town of Hadley has 11 departments responsible for implementing portions of its MS4 program as identified in the NOI. Therefore, due to the extensive number of departments involved as part of the Town's MS4 program, it is not feasible to list names and titles of responsible personnel for each one, as the information within this plan would be frequently out of date. However, **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 (e.g. department head, administrator, senior elected official, etc.) within each department listed below.

Table 1-2. Program Responsibilities

Department / Division	General Responsibilities
Board of Selectmen	Public participation
Building Department	Information distribution for public education; bylaw and regulation development; site plan review procedures; site inspections and procedures; as-built submittal; TMDL and water quality limited requirements
Board of Health	Sanitary Sewer Overflow (SSO) inventory; IDDE program implementation; IDDE training; bylaw and regulation development
Conservation Commission	Information distribution for public education; bylaw and regulation development; site plan review procedures; site inspections and procedures; as-built submittal; target properties to reduce impervious areas and for BMP retrofit; TMDL and water quality limited requirements
Department of Public Works	Public participation; SSO inventory; system mapping; IDDE program creation and implementation; IDDE training; bylaw and regulation development; as-built submittal; target properties to reduce impervious areas and for BMP retrofit; inventory buildings and facilities; develop operation and maintenance procedures; SWPPP development and implementation; catch basin cleaning and street sweeping; road salt optimization program; BMP inspections and maintenance; TMDL and water quality limited requirements
Hadley Media (HPAT)	Video broadcasting
Information Technology	Social media participation; website management; public participation; TMDL and water quality limited requirements
Planning Board	Information distribution for public education; bylaw and regulation development; site plan review procedures; site inspections and procedures; as-built submittal; target properties to reduce impervious areas and for BMP retrofit; TMDL and water quality limited requirements
Town Administrator	Public participation
Town Clerk	Information distribution for public education; water quality limited requirements
Zoning Board	Regulation development; TMDL requirements

2 Town Characteristics

This section provides some background information on the Town of Hadley, 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

Hadley is a landlocked community located in central Massachusetts within Hampshire County. It is generally bordered by the Connecticut River to the west, with Hatfield Massachusetts directly across the River to the northwest, Northampton Massachusetts directly across the River to the southwest, South Hadley Massachusetts to the south, Amherst Massachusetts to the east, and Sunderland Massachusetts to the north. Small portions of the southwestern tip of Hadley are also bordered by Easthampton and Holyoke, MA. Select relevant community profile information is provided below:

- Total Area = 24.6 square miles (*source: Wikipedia*)
- 2010 Population = 5,250 (*source: EPA maps based on 2010 US Census*)
- Regulated Area Population = 2,918 (*source: EPA maps based on 2010 US Census*)

2.2 Demographics

Demographics play a role in developing a public education program that targets the appropriate audience through the most appropriate means. Information on owner occupancy versus rentals and languages spoken can help shape how information is disseminated. Demographic data from the U.S. Census Bureau's 2010 Census and 2016 American Community Survey indicate that the majority of homes (69.3%) in Hadley are owner-occupied, and the majority of the population (97.3%) speaks English. Therefore, the Public Education and Outreach Program can proceed with disseminating its materials in English and be reasonably certain that any materials distributed to homes reaches permanent residents and homeowners.

2.3 Land Use

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

- | | |
|--------------------------------|-----|
| • Commercial | 3% |
| • Forest | 27% |
| • Industrial | <1% |
| • Open Land and Agriculture | 42% |
| • Residential | 10% |
| • Transportation and Utilities | <1% |
| • Wetlands | 9% |
| • Water | 7% |

As per the above, Hadley has substantial forest, open land, and water/wetland area (approximately 85%), with much of the remaining consisting of low-density residential development (approximately 10%). Remaining land use (approximately 5%) consists largely of roadways and minor commercial/industrial development.

2.4 303(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 all 303(d) waters and specifically address those that have a completed TMDL study. **Table 2-1** lists the "impaired waters" partially or wholly located within the boundaries of Hadley's regulated area based on the Final 2016 Massachusetts Integrated List of Waters produced by MassDEP every 2 years¹. These waters are shown in **Figure 2-3**. Hadley will review changes as new lists are published and update this plan as required.

Table 2-1. Impaired Waters

Waterbody Name	Segment ID and Category		Impairment(s)	Approved TMDL ²
Lake Warner	MA34098	4a	(Non-Native Aquatic Plants*)	
			Excess Algal Growth	651
			Oxygen, Dissolved	651
			Phosphorus (Total)	651
			Turbidity	651
Connecticut River	MA34-04	5	Escherichia coli	
			PCBs in Fish Tissue	
Fort River	MA34-27	5	Escherichia coli	
Mill River	MA34-25	5	Escherichia coli	

Category 4a Waters – impaired waters with a completed TMDL.

Category 5 Waters – impaired waters that require a TMDL.

* TMDL not required (Non-pollutant)

Note that although Hadley has a waterbody listed as impaired for PCB in fish tissue, the 2016 MS4 Permit does not specify a wasteload allocation or other requirements for MS4 discharges. Thus, there are no requirements related to PCB reduction.

Hadley is also subject to the Long Island Sound nitrogen TMDL. Thus, Hadley will meet the requirements of this waterbody and remaining requirements for TMDL or water quality limited waterbodies related to phosphorus and bacteria as outlined further in Section 9.

¹Note that at the time of preparation of this report (June 2021), the 2016 303d list is the most up to date finalized 303d List as approved by USEPA on December 2019.

²"Approved TMDLs" are those that have been approved by EPA as of the date of issuance of the 2016 MS4 Permit.

2.5 Measures to Protect Surface Drinking Water Supplies

All public drinking water is obtained from wells and there are no surface water supplies or tributaries within the Town. The town does not currently plan on using any surface waterbodies for public drinking water supplies in the near future and implementation of the SWMP helps protect water quality in all receiving waterbodies.

2.6 Endangered Species Act Determination

In order to be eligible to discharge stormwater under the 2016 MS4 Permit, the Town of Hadley 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*), Roseate Tern (*Sterna dougallii dougallii*), Puritan Tier Beetle (*Cicindela puritana*), and Small Whorled Pogonia (*Isotria medeoloides*) were identified as potentially being present within Hadley’s regulated area. No critical habitats were identified.

2.7 National Historic Preservation Act Determination

Regulated MS4s must also evaluate whether its discharges have the potential to affect historic properties. The MS4 Permit typically authorizes discharges from existing facilities and requires control of the pollutants discharged from the facility, however, EPA does not anticipate effects on historic properties from the pollutants in the authorized discharges. Thus, to the extent EPA’s issuance of the MS4 General Permit authorizes discharges of such constituents, confined to existing channels, outfalls or natural drainage areas, the permitting action does not have the potential to cause effects on historical properties. If there have been no relevant changes in operation of the MS4 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 need to 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 during a later date(s).

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.

The Town must address 4 core target audiences, unless 1 of these audiences is not present in the MS4 community:

1. Residents;
2. Businesses, Institutions, and Commercial facilities;
3. Developers and Construction; and
4. Industrial facilities.

At least 2 educational messages must be distributed to audiences 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. In Hadley, the only waterbody impairments listed as having specific requirements under the 2016 MS4 Permit are nitrogen, phosphorus, and bacteria. Thus, priority waterbodies and impairments can be found in **Table 3-1**.

Table 3-1. Priority Waterbodies

Waterbody Name	Impairment
Long Island Sound (Connecticut River)	Nitrogen
Lake Warner	Phosphorus
Connecticut River	Escherichia coli
Fort River	Escherichia coli
Mill River	Escherichia coli

Note that the Lake and Pond Phosphorus TMDL Requirements outlined under the permit do not outline specific public education requirements as pertains to Lake Warner. Relevant public information on nitrogen and bacteria topics as outlined by the 2016 MS4 Permit is included with each of the 4 applicable target audiences as outlined below.

3.2 Objectives and Goals

The Town of Hadley implements an education program that includes educational goals based on stormwater issues of significance within the MS4 area, increase knowledge, and change behavior of the public so that pollutants in stormwater are reduced.

3.3 Public Education Program

The following sections outline how Hadley is meeting the requirements of the 2016 MS4 Permit by completing targeted outreach to the 4 required audiences. Additionally, since the Town has waterbodies with TMDL and water quality impairments associated with nitrogen, phosphorus, and bacteria, the program includes messages to help minimize contributions of these pollutants, in accordance with the “Enhanced BMPs” requirements in Appendix F and Appendix H of the 2016 MS4 Permit.

3.3.1 Residential

Informational Topics

As required for all communities under the 2016 MS4 Permit, the following topics are addressed under the Residential public education and outreach program:

- Effects of 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.

As required for waterbodies subject to the Long Island Sound nitrogen TMDL, the Town shall supplement its Residential program with the following annual messages encouraging:

- Spring (April-May): proper disposal of grass clippings and fertilizer usage, such as slow-release and phosphorus-free;
- Summer (June-July): proper management of pet waste; and
- Fall (August-October): proper disposal of leaf litter.

As required for water quality limited waterbodies where bacteria and pathogen is the cause of impairment, the Town shall supplement its Residential program with the following:

- An annual message encouraging the proper management of pet waste;
- Distribute educational materials to dog owners with license issuance or renewal;
- Describe detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance; and
- Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens.

Educational Message and Methods of Distribution

The following table shows the educational messages and methods of distribution for the above topics, along with responsible parties and measurable goals.

Table 3-2. BMP Description – Residential Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
BMP 1-1: Residential Education Program	Brochures and pamphlets	Distribute fact sheets or brochures on pet waste pickup with dog licenses	Town Clerk	Provide Information with all applications and renewals
	Videos	Broadcast informational videos on public access channel	Hadley Media (HPAT)	Televise informational video for a minimum of 2 airings per year
	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Information Technology	Creation of website with periodic updates
	Social media outreach	Provide relevant information to different audiences via various social media platforms	Information Technology	Follow statewide “Think Blue” campaign on social media platforms

The following table lists which of the topics are covered under each message.

Table 3-3. Residential Public Outreach Topics and Message

	Pet Waste Fact Sheet	Videos	Social Media	Stormwater Webpage
Topics and Educational Message				
Core Program Topics				
Effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers) on water quality		X	X	X
Benefits of appropriate on-site infiltration of stormwater		X	X	X
Effects of automotive work and car washing on water quality		X	X	X
Proper disposal of swimming pool water;		X	X	X
Proper management of pet waste	X	X	X	X
Maintenance of septic systems		X	X	X

Table 3-3 (continued). Residential Public Outreach Topics and Message

Topics and Educational Message	Pet Waste Fact Sheet	Videos	Social Media	Stormwater Webpage
Nitrogen and Phosphorus Impairment Topics				
Spring (March/April): encourage proper use and disposal of grass clippings and encourage the proper use of slow-release and phosphorus-free fertilizers		X	X	X
Summer (June/July): encourage proper management of pet waste, including noting any existing bylaws where appropriate	X	X	X	X
Fall (August/September/October): encourage the proper disposal of leaf litter		X	X	X
Bacteria Impairment Topics				
An annual message encouraging the proper management of pet waste, including noting any existing bylaws where appropriate	X	X	X	X
Disseminate educational materials to dog owners at the time of issuance or renewal of a dog license, or other appropriate time	X	X	X	X
Describe detrimental impacts of improper pet waste management, requirements for waste collection and disposal, and penalties for non-compliance	X	X	X	X
Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens		X	X	X

Schedule

Due to the importance of educating Town residents, many of the above topics are made available continuously via brochures and the website. Information pertaining to the nitrogen seasonal messages is made available on the website continuously with notes provided for the appropriate timeframes for implementing certain topics.

3.3.2 Businesses, Institutions, and Commercial Facilities

Informational Topics

As required for all communities under the 2016 MS4 Permit, the following topics are addressed under the Business, Institutions, and Commercial public education and outreach program:

- 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.

As required for waterbodies subject to the Long Island Sound nitrogen TMDL, the Town shall supplement its Business, Institutions, and Commercial program with the following annual messages encouraging:

- Spring (April-May): proper disposal of grass clippings and fertilizer usage, such as slow-release and phosphorus-free;
- Summer (June-July): proper management of pet waste; and
- Fall (August-October): proper disposal of leaf litter.

Educational Message and Methods of Distribution

The following table shows the educational messages and methods of distribution for the above topics, along with responsible parties and measurable goals. All informational topics are addressed on the Town's website.

Table 3-4. BMP Description – Businesses, Institutions, and Commercial Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-2:</u> Businesses, Institutions, and Commercial Education Program	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Information Technology	Creation of website with periodic updates
	Social media outreach	Provide relevant information to different audiences via various social media platforms	Information Technology	Follow statewide "Think Blue" campaign on social media platforms

Schedule

Information pertaining to the Business, Institutions, and Commercial public education and outreach program is made available continuously on the website and via social media.

3.3.3 Developers and Construction

Informational Topics

As required for all communities under the 2016 MS4 Permit, the following topics are addressed under the Developers and Construction public education and outreach program:

- 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).

Educational Message and Methods of Distribution

The following table shows the educational messages and methods of distribution for the above topics, along with responsible parties and measurable goals. All informational topics are addressed on the Town's website and via erosion control and fact sheets provided to developers when applying for applicable permits.

Table 3-5. BMP Description – Developers and Construction Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
BMP 1-3: Developers and Construction Education Program	Brochures and pamphlets	Distribute fact sheets or brochures on erosion and sediment control with permit applications.	Planning Board, Conservation Commission, Building Department	Provide information with all applications.
	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Information Technology	Creation of website with periodic updates
	Social Media	Provide relevant information to different audiences via various social media platforms	Information Technology	Follow statewide "Think Blue" campaign on social media platforms

Schedule

Information pertaining to the Developers and Construction is made available continuously on the website and via social media.

3.3.4 Industrial

Informational Topics

As required for all communities under the 2016 MS4 Permit, the following topics are addressed under the Industrial public education and outreach program:

- Equipment inspection and maintenance;
- Proper storage of industrial materials and dumpster management;
- Proper management and disposal of wastes;
- Minimization of use and proper storage of salt or other de-icing/anti-icing materials;
- Benefits of on-site stormwater from areas with low exposure to industrial materials;
- Proper maintenance of parking lot surfaces; and
- Information about EPA's multisector general permit (MSGP).

Educational Message and Methods of Distribution

The following table shows the educational messages and methods of distribution for the above topics, along with responsible parties and measurable goals. All informational topics are addressed on the Town's website.

Table 3-6. BMP Description – Industrial Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-4:</u> Industrial Education Program	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Information Technology	Creation of website with periodic updates
	Social Media	Provide relevant information to different audiences via various social media platforms	Information Technology	Follow statewide "Think Blue" campaign on social media platforms

Schedule

Information pertaining to the Industrial public education and outreach program is be made available on the website continuously on the website and via social media.

3.4 Measuring Public Education Program Effectiveness

During completion of the Town's annual report as detailed further under Section 10, Hadley 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 quantities of materials distributed and feedback from town employees based on observations in their area of work. Educational messages and/or distribution techniques will be modified as needed, should program managers determine that they are ineffective.

4 MCM 2: Public Participation & 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 also be made available so that the public has opportunities to review and comment.

4.2 Objectives and Goals

Hadley implements a public participation and involvement program that provides opportunities for review and implementation of the Town's SWMP. This helps support public education and outreach items under MCM 1.

4.3 Public Participation and Involvement Opportunities

The following outlines how Hadley is meeting permit requirements to provide the public with opportunities to participate in reviewing and implementing the SWMP.

4.3.1 Make Documents Publicly Available for Comment

Hadley makes this written SWMP Plan and annual reports 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 is posted to the website annually as additional tasks are completed. The following table shows the BMP, responsible parties and measurable goals.

Table 4-1. BMP Description – Make Documents Publicly Available for Comment

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-1</u> : Make SWMP Plan Publicly Available	Board of Selectmen, Information Technology, Department of Public Works	Annual review of stormwater management plan and posting on website. Allow public to comment on the plan at least annually

4.3.2 Household Hazardous Waste Collection

The Town sponsors at least 1 event annually during which residents can drop off household hazardous waste for proper disposal. The following table shows the BMP, responsible parties and measurable goals.

Table 4-2. BMP Description – Household Hazardous Waste Collection

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-2:</u> Household Hazardous Waste Collection Event	Department of Public Works	Allow annual participation in at least 1 household hazardous waste event

4.3.3 Cleanup Events

The Town supports an annual cleanup event typically held as part of Earth Day events and focusing on roadside waste. The following table shows the BMP, responsible parties and measurable goals.

Table 4-3. BMP Description – Hold Watershed Improvement Events

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-3:</u> Roadside Cleanup Event	Board of Selectmen	Perform cleanup operations at least once per year

4.3.4 Public Comment

The Town provides contact information for reporting of illicit discharges or other concerns. The following table shows the BMP, responsible parties and measurable goals.

Table 4-4. BMP Description – Hold Watershed Improvement Events

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-4:</u> Public Comment	Department of Public Works	Contact information provided on website and in other IDDE-related fact sheets and brochures

4.3.5 NPDES Steering Committee

An NPDES Steering Committee has been established by the Town to oversee permit implementation and compliance. This committee includes members from applicable town boards and departments to allow input from various Town parties. The following table shows the BMP, responsible parties and measurable goals.

Table 4-5. BMP Description - Hold Watershed Improvement Events

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-5:</u> NPDES Steering Committee	Department of Public Works, Town Administrator	Established a NPDES Steering Committee to oversee permit implementation including members from applicable town boards and departments

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. A summary of the required IDDE activities and timelines are provided below. See sections below for more information.

5.1.1 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 Hadley, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.

5.1.2 Sanitary Sewer Overflow

Regulated communities must identify all known locations where SSOs have discharged to the MS4 during the previous 5-years 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.

5.1.3 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.

5.1.4 Illicit Discharge, Detection, and Elimination Program

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.

5.1.5 Annual IDDE Training

The 2016 MS4 Permit requires annual IDDE training to be provided to all employees involved in the IDDE program. Training must, 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 Objectives and Goals

The Town of Hadley implements an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. The ultimate goal is to remove sources of pollution and improve water quality in receiving waterbodies.

5.3 IDDE Program

The following sections outline how Hadley is meeting the requirements of the 2016 MS4 Permit to implement an IDDE program to locate, eliminate, and prohibit illicit discharges.

5.3.1 Establish Legal Authority

Requirements

Permittees must develop an ordinance, bylaw or regulatory mechanism to:

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

Work to be Performed

The Town of Hadley has established an “Illicit Connections and Discharges to Storm Sewer System” bylaw under Chapter 195 Sewers, Article II, Sections 195-6 to 195-16, dated July 5, 2005 which addresses all of the above requirements in order to create an IDDE program to satisfy the 2016 MS4 Permit, and is provided under **Appendix B**. The following table shows the BMP, responsible parties and measurable goals.

Table 5-1. BMP Description – Establish IDDE Legal Authority

BMP Description	Responsible Parties	Measurable Goal
BMP 3-1: Enforce Current IDDE Bylaw	Department of Public Works, Planning Board, Board of Health	Continue enforcing existing IDDE bylaw, created July 5, 2005

5.3.2 Complete System Mapping

Requirements

The 2016 MS4 Permit requires the storm system map to be updated in 2 phases. Phase I mapping must be completed within 2 years of the effective date of the permit (July 1, 2020) and include the following information:

- Outfalls and receiving waters (previously required by the MS4-2003 permit);
- Open channel conveyances (swales, ditches, etc.);
- Interconnections with other MS4s and other storm sewer systems;
- Municipally owned stormwater treatment structures;
- Waterbodies identified by name with a list of impairments as identified on the most recent EPA approved Massachusetts Integrated List of Waters report; and
- Initial catchment delineations based on topography or contributing structures.

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

- Outfall locations (latitude and longitude with a minimum accuracy of +/-30 feet);
- Pipe connectivity;
- Manholes;
- Catch basins;
- Refined catchment delineations based on updated mapping information;
- Municipal sanitary sewer system; and
- Municipal combined sewer system.

Work to be Performed

The Town of Hadley has mapped much of its stormwater system. Current mapping status is provided in **Appendix C**. All information is incorporated into its GIS library. Where applicable, GIS information can be exported into other formats, such as Microsoft Excel, for use with annual reporting or tracking. The Town of Hadley will continue to update its stormwater mapping by the required deadlines to include the above information. The following table shows the BMPs, responsible parties and measurable goals.

Table 5-2. BMP Description – Complete System Mapping

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 3-2:</u> Phase I Storm Sewer System Map	Department of Public Works	Complete preliminary system map within 2 years of effective date of permit
<u>BMP 3-3:</u> Phase II Storm Sewer System Map	Department of Public Works	Complete full system map 10 years after effective date of permit

5.3.3 Complete Sanitary Sewer Overflow Inventory

Requirements

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

Work to be Performed

The Town of Hadley completed an inventory of SSOs that have discharged to the MS4 within the 5 years prior to submitting the Year 1 Annual Report to EPA. According to the results of that inventory, there were no known SSOs to surface water or into the MS4 during those 5 years. The inventory is also included in the IDDE Plan, including the status of mitigation and corrective measures to address each identified SSO. The inventory will be updated annually as part of the Town's annual report submittal to EPA in September of each year. The following table shows the BMP, responsible parties and measurable goals.

Table 5-3. BMP Description – Generate SSO Inventory

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 3-4:</u> Complete SSO Inventory	Department of Public Works, Board of Health	Develop SSO inventory and complete within 1 year of effective date of permit

In the event a SSO occurs, the town will track and report the following SSO information: the location; a clear statement of whether the discharge entered a surface water directly or entered the MS4; date(s) and time(s) of each known SSO occurrence; estimated volume(s) of the occurrence; description of the occurrence indicating known or suspected cause(s); mitigation and corrective measures completed with dates implemented; and mitigation and corrective measures planned with implementation schedules. The SSO inventory will be updated as needed.

In the event of an overflow or bypass, a notification must be reported within 24 hours by phone to MassDEP, EPA, and other relevant parties. Follow up the verbal notification with a written report following MassDEP's Sanitary Sewer Overflow (SSO)/Bypass notification form within 5 calendar days of the time you become aware of the overflow, bypass, or backup.

The MassDEP contacts are:

- MassDEP Western Region, 436 Dwight St., Springfield, MA 01103; (413) 784-1100

The EPA contacts are:

- EPA New England, 5 Post Office Square, Boston, MA 02109; (617) 918-1510

5.3.4 Develop and Implement Written IDDE Program

Requirements

The Town of Hadley must develop an IDDE Program, the majority of which is contained in a written Illicit Discharge, Detection, and Elimination Plan, a standalone document separate from this SWMP Plan. The IDDE Plan must include a statement of responsibilities and detailed written procedures for the following:

- 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.

Work to be Performed

Hadley has developed a written IDDE Plan as a separate standalone document to address the illicit discharge requirements of the 2016 MS4 Permit. Hadley is working towards implementing a comprehensive IDDE Plan and program, according to the schedule set forth in the permit. The following table shows the BMPs, responsible parties and measurable goals.

Table 5-4. BMP Description – Written IDDE Program and Program Implementation

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 3-5:</u> Written IDDE Program	Department of Public Works	Create written IDDE program within 1 year of the effective date of the permit and update periodically
<u>BMP 3-6:</u> Outfall / Interconnection Inventory and Ranking	Department of Public Works	Classify and rank outfalls and interconnections within 1 year of the effective date of the permit.
<u>BMP 3-7:</u> Implement IDDE Program	Department of Public Works, Board of Health	Implement catchment investigations and complete within 10 years of the effective date of the permit

5.3.5 Perform Dry and Wet Weather Outfall Screening

Requirements

Outfalls and contributing catchment areas must be categorized into Problem, High, Low, and Excluded outfalls and then ranked within each category. Additionally, catchments draining to each of the waterbodies designated as impaired for pathogens must be classified as either “Problem Catchments” or “High” priority as outlined further in Section 9. The 2016 MS4

Permit then requires all outfalls classified as High and Low to be inspected for the presence of dry conditions within 3 years of the permit effective date. While completing screening, permittees must also document various physical indicators of the outfall and sample flowing outfalls. Additionally, outfalls with at least 1 SVF must also be sampled during wet weather. Depending on the results, additional screening and sampling may be required further up into the contributing catchment. Once dry and wet weather sampling is complete, additional ongoing screening shall be performed once every 5 years in accordance with the catchment prioritization and ranking. Both dry and wet weather outfall screening must be conducted in accordance with screening procedures outlined in the written IDDE Plan. All sampling results shall be reported in the permittee's annual report.

Work to be Performed

Hadley developed an outfall sampling program under the IDDE Plan which is being implemented moving forward according to the schedule outlined in the 2016 MS4 Permit. This includes dry and wet weather screening on Town outfalls, including those with SVFs where applicable. Known outfalls were evaluated during dry weather conditions during 2019 and 2021 and none of the sampling data collected from flowing outfalls met the Permit criteria as being highly likely to contain illicit discharges from sanitary sources. Results are documented in the IDDE Plan.

Wet weather screening on Town outfalls, including those with SVFs, will be completed at a later date where applicable. The program will be performed in accordance with the written procedures and schedules in the IDDE Plan. Ongoing screening will also be performed after the conclusion of the initial sampling rounds. The following table shows the BMPs, responsible parties and measurable goals.

Table 5-5. BMP Description – Perform Dry and Wet Weather Outfall Screening

BMP Description	Responsible Parties	Measurable Goal
Dry Weather Screening	Department of Public Works	Complete in accordance with outfall screening procedure within 3 years of the effective permit date
Wet Weather Screening	Department of Public Works	Complete in accordance with outfall screening procedure within 10 years of the effective permit date
Ongoing Screening	Department of Public Works	Conduct ongoing dry and wet weather outfall screening upon completion of the IDDE program

5.3.6 Perform Annual IDDE Training

The 2016 MS4 Permit requires annual IDDE training to be provided to all employees involved in the IDDE program. Therefore, Hadley provides annual training that at a minimum includes 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. The Department of Public Works and Board of Health are the sole municipal departments responsible for implementing the IDDE program, and

thus training focuses on these departments. Frequency and type(s) of training will be included in the annual report. The following table shows the BMP, responsible parties and measurable goals.

Table 5-6. BMP Description – Perform Annual IDDE Training

BMP Description	Responsible Parties	Measurable Goal
Perform IDDE Training	Department of Public Works, Board of Health	Complete annual training

5.4 Measuring IDDE Program Effectiveness

The success of the IDDE Program is 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 items are tracked throughout the year and reported as part of each annual report submitted to EPA each year by September 28.

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 1 acre within the regulated area. This program shall also regulate disturbances less than 1 acre if they are part of a larger common plan of development or sale that would disturb 1 or more acres. A summary of the required Construction Site Stormwater Runoff Control Program activities and timelines are provided below:

6.1.1 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 MS4-2003 permit such as Hadley, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.

6.1.2 Construction Site Stormwater Runoff Control Program

The 2016 MS4 Permit requires preparation of a written Construction Site Stormwater Runoff Control Program procedures that includes pre-construction site plan review and onsite construction inspections. Permittees must also establish requirements for developers to implement a Sediment and Erosion Control Program as part of its Construction Site Stormwater Runoff Control Program that includes BMPs to reduce pollutant sources from construction sites. This program should also include requirements for controlling other wastes during construction.

6.2 Objectives and Goals

The Town of Hadley implements an effective construction stormwater runoff control program to minimize or eliminate erosion and maintain sediment onsite so that it is not transported in stormwater and allowed to discharge to a water of the U.S through the permittee's MS4.

6.3 Construction Site Stormwater Runoff Control Program

The following sections outline how Hadley is meeting the requirements of the 2016 MS4 Permit to establish a Construction Site Stormwater Runoff Control Program.

6.3.1 Establish Legal Authority

Requirements

Permittees must develop an ordinance, bylaw or regulatory mechanism to:

- Require the use of sediment and erosion control practices at construction sites;
- Include controls for other wastes on construction sites.

In addition, the bylaw may require updates to address the requirements of the Lake and Pond Phosphorus TMDL Requirements. See Section 9 for more information.

Work to be Performed

The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part requires use of soil erosion and sediment controls to stormwater runoff at construction sites, and also includes controls for other wastes at construction sites. The following table shows the BMP, responsible parties and measurable goals

Table 6-1. BMP Description – Establish Construction Site Legal Authority

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 4-1</u> : Develop and Enforce Construction Bylaw	Planning Board, Conservation Commission, Building Department	Complete bylaw within 1 year of the effective date of the permit

6.3.2 Establish Written Procedures for Site Plan Review

Requirements

The 2016 MS4 Permit requires establishing written procedures for pre-construction plan review of the site design, planned operations, planned BMPs during the construction phase, and planned BMPs to manage runoff after development that includes the following:

- Potential water quality impacts;
- Consideration of information submitted by the public; and
- Evaluation of opportunities for use of LID and green infrastructure (GI).

Work to be Performed

The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part provide written procedures for reviewing plan submittals, including plans, calculations, and other items as required by the permit. The following table shows the BMP, responsible parties and measurable goals.

Table 6-2. BMP Description – Establish Site Plan Review Procedures

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 4-2:</u> Develop Written Procedures for Site Plan Review	Planning Board, Conservation Commission, Building Department	Establish procedures for site plan review within 1 year of the effective date of the permit

6.3.3 Establish Procedures for Site Inspections and Enforcement

Requirements

The 2016 MS4 Permit requires the development of written procedures for site inspections and enforcement actions to take place both during construction of BMPs and after construction of BMPs is completed to ensure they are working as described in the approved plans. Procedures must define the following:

- Who is responsible for site inspections;
- Qualifications necessary to perform inspections;
- Who has authority to implement enforcement procedures;
- Ability to impose sanctions to ensure program compliance;
- The use of standardized inspection forms (if appropriate); and
- How to track the number inspections and enforcement actions for reporting in the Annual Report.

Work to be Performed

The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part provide written procedures for site inspections, enforcement actions, outlines qualified personnel, and a tracking methodology. The following table shows the BMP, responsible parties and measurable goals.

Table 6-3. BMP Description – Establish Site Inspections and Enforcement Procedures

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 4-3:</u> Develop Written Procedures	Department of Public Works	Establish procedures for site inspections and enforcement within

for Site Inspections and Enforcement		1 year of the effective date of the permit
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6.3.4 Establish a Sediment and Erosion Control Program

Requirements

Permittees must establish requirements for construction site operators performing land disturbance activities within the MS4 jurisdiction that result in stormwater discharges to the MS4 to implement a sediment and erosion control program that includes BMPs appropriate for the conditions at the construction site. Examples of sediment and erosion control measures for construction sites include local requirements to:

1. Minimize the amount of disturbed area and protect natural resources;
2. Stabilize sites when projects are complete or operations have temporarily ceased;
3. Protect slopes on the construction site;
5. Protect all storm drain inlets and armor all newly constructed outlets;
6. Use perimeter controls at the site;
7. Stabilize construction site entrances and exits to prevent off-site tracking;
8. Inspect stormwater controls at consistent intervals.

Work to be Performed

The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part provide written procedures to prohibit illicit discharge of debris, truck wash-out, litter and sanitary waste control on constructions sites. The following table shows the BMPs, responsible parties and measurable goals.

Table 6-4. BMP Description – Develop an Erosion and Sediment Control Program

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 4-4:</u> Establish a Sediment and Erosion Control Program	Planning Board, Conservation Commission, Building Department	Establish procedures for development of an erosion and sediment control program within 1 year of the effective date of the permit
<u>BMP 4-5:</u> Develop Procedures for Waste Control	Planning Board, Conservation Commission, Building Department	Establish requirements to control construction site wastes within 1 year of the effective date of the permit

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 1 or more acres and discharge into an MS4 system. This program shall also regulate disturbances less than 1 acre if they are part of a larger common plan of development or sale that would disturb 1 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:

7.1.1 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;
- Meet many of the requirements of the Massachusetts Stormwater Handbook and associated stormwater standards;
- Incorporate runoff volume storage and/or pollutant removal requirements; and
- Meet additional requirements for TMDL and water quality limited waterbodies.

Updates must be made within 3 years of the effective permit date.

7.1.2 As-Built Submittals

The permittee must require the submission of as-built drawings within 3 years after completion of construction projects and include structural and non-structural controls.

7.1.3 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 3 years of the effective permit date.

7.1.4 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.

7.1.5 Inventory of Potential Retrofit Sites

The permittee must complete an inventory within 4 years of the effective permit date to determine at least 5 permittee-owned properties that could be modified or retrofitted with stormwater BMP improvements.

7.2 Objectives and Goals

The Town of Hadley implements and enforces a program to reduce pollutants in stormwater runoff discharged to the MS4 from all construction activities that result in a land disturbance greater than or equal to 1 acre within the regulated area.

7.3 Post-Construction Stormwater Management Program

The following sections outline how Hadley is meeting the requirements of the 2016 MS4 Permit to establish a Post-Construction Stormwater Management Program.

7.3.1 Establish Legal Authority

Requirements

Under the 2016 MS4 Permit, permittees shall develop or modify an ordinance, bylaw, or other regulatory mechanism within 3 years of the effective date of the permit to contain provisions that are as least as stringent as the following:

1. Use LID site planning and design strategies unless infeasible;
2. Stormwater management system designs shall be consistent with, or more stringent than, the requirements of the 2008 Massachusetts Stormwater Handbook, as amended;
3. Stormwater management systems on new development shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 60% of the average annual load of Total Phosphorus related to the total postconstruction impervious surface area on the site as calculated based on the average annual loading and not on the basis of any individual storm event.
 - a) Average annual pollutant removal requirements are achieved through one of the following methods:
 - 1) Installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) 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, then 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; or

- 2) Retaining the volume of runoff equivalent to, or greater than, one inch multiplied by the total post-construction impervious surface area on the new development site; or
 - 3) Meeting a combination of retention and treatment that achieves the above standards; or
 - 4) Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the new development site.
4. Stormwater management systems on redevelopment sites shall be designed to meet an average annual pollutant removal equivalent to 80% of the average annual postconstruction load of TSS related to the total post-construction impervious area on the site AND 50% of the average annual load of Total Phosphorus related to the total post-construction impervious surface area on the site as calculated based on the average annual loading and not on the basis of any individual storm event.
- b) Average annual pollutant removal requirements are achieved through one of the following methods:
 - 1) Installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) 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, then 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; or
 - 2) 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
 - 3) Meeting a combination of retention and treatment that achieves the above standards; or
 - 4) Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the redevelopment site.
 - c) Redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways, (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects) shall improve existing conditions unless infeasible are exempt from part a) 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 part a) above.

Additionally, the bylaw must include requirements for stormwater structural BMPs proposed as part of new or redevelopment to be optimized as follows in order to meet TMDL and water quality limited waterbodies requirements:

- For nitrogen removal for development within the Long Island Sound watershed (Long Island Sound Nitrogen TMDL); and

- For phosphorus removal for development within the Lake Warner watershed (Lake and Pond Phosphorus TMDL).

See Section 9 for more information.

Work to be Performed

The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part requires the use of LID techniques as feasible, as well as establishing stormwater standards for TSS and total phosphorus removal for both new development and redevelopment. The following table shows the BMP, responsible parties and measurable goals.

Table 7-1. BMP Description – Establish Post-Construction Site Legal Authority

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 5-1:</u> Develop and Enforce Post-Construction Bylaw	Planning Board, Conservation Commission, Building Department	Complete bylaw within 3 years of the effective date of the permit

7.3.2 Require Submittal of As-Built Plans

The permittee must require the submission of as-built drawings that include structural and non-structural stormwater controls within 3 years after completion of construction projects. The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part requires the submittal of as-built plans prior to the completion of a project. The following table shows the BMPs, responsible parties and measurable goals.

Table 7-2. BMP Description – Require Submittal of As-Built Plans

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 5-2:</u> Require Stormwater As-Built Plan Submittal	Planning Board, Conservation Commission, Building Department	Require submittal of as-built plans for completed projects within 3 years of completion

7.3.3 Require Long Term Operation and Maintenance

As part of its Post Construction Stormwater Management Program, the Town of Hadley shall develop procedures to ensure that the adequate long-term operation and maintenance of BMPs is accounted for at the conclusion of a construction project, along with a dedicated funding source, within 3 years of the effective permit date. The permittee must require the submission of as-built drawings that include structural and non-structural stormwater controls within 3 years after completion of construction projects. The Town of Hadley has established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre and is provided under **Appendix B**. The bylaw and accompanying regulations in part requires preparation of comprehensive operation and maintenance plans prior to the completion of a project. The following table shows the BMPs, responsible parties and measurable goals.

Table 7-3. BMP Description – Require Long Term Operation and Maintenance Plans

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 5-3:</u> Require Long Term Operation and Maintenance	Planning Board, Conservation Commission, Building Department, Department of Public Works	Require submittal of operation and maintenance plans and dedicated funding to ensure long term maintenance within 3 years of the effective date of the permit

7.3.4 Complete Regulatory Assessment

Requirements

The 2016 MS4 permit requires permittees to complete a report that assesses current street design, parking lot guidelines, and other local requirements that could affect creation of impervious cover to determine if changes to existing design standards are required to support LID. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover. Any required changes to reduce mandatory creation of impervious cover in support of LID should be made within 4 years of the effective permit date.

Additionally, the permittee must complete a report that assesses current regulations to determine the feasibility of allowing green roofs, infiltration practices, porous/pervious pavement, and water harvesting/storage devices where feasible. The assessment must indicate if the practices are allowed in the MS4 area and under what circumstances they are allowed. If the practices are not allowed, the permittee shall determine what hinders the use of these practices, what changes in local regulations may be made to make them allowable, and provide a schedule for implementation of recommendations. Any required changes to allow for these BMPs must be completed within 4 years of the effective permit date.

Work to be Performed

The Town of Hadley has not yet performed a comprehensive review of all regulations for the above items. The Town will prepare a report assessing requirements that affect the creation of impervious cover. This assessment will determine if design standards for streets and parking lots can be modified to support low impact design options. The Town will also prepare a report assessing existing local regulations to determine the feasibility of making green infrastructure – such as green roofs, infiltration practices, and water harvesting devices – allowable when appropriate site conditions exist. When completed, the reports will be part of this Stormwater Management Plan. Review and updates to relevant regulations will be completed within 4 years of the effective permit date to meet permit requirements. The following table shows the BMPs, responsible parties and measurable goals.

Table 7-4. BMP Description – Complete LID and GI Regulatory Updates

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 5-4:</u> Street design and parking lot guidelines	Planning Board, Conservation Commission, Zoning Board	Complete regulatory updates within 4 years of the effective date of the permit
<u>BMP 5-5:</u> Allow green infrastructure	Planning Board, Conservation Commission, Building Department, Zoning Board	Complete regulatory updates within 4 years of the effective date of the permit

7.3.5 Complete Inventory of Potential BMP Retrofit Sites

Requirements

Permittees must complete an inventory of at least 5 existing permittee-owned properties that could be modified or retrofitted with structural stormwater BMP improvements to reduce the frequency, volume, and pollutant loads within 4 years of the effective permit date. The inventory provided in **Appendix D** should include municipal properties with significant impervious cover such as parking lots, buildings, and maintenance yards, along with infrastructure such as existing rights-of-way, outfalls and stormwater conveyances such as swales or detention practices. The permittee should address potential site constraints that could hinder BMP construction, such as subsurface conditions, depth to water table, and utility impacts, and should ideally allow opportunities for public education.

Beginning with the fifth annual report, should BMPs at 1 or more sites be constructed, the inventory should be updated so that it always contains at least 5 sites in the inventory for potential improvement. The permittee must report on all properties that have been modified or retrofitted to mitigate impervious area.

Additionally, the Town of Hadley must identify stormwater retrofit opportunities for nitrogen reduction for properties within the Long Island Sound watershed and phosphorus reduction within the Lake Warner watershed in order to meet TMDL requirements. See Section 9 for more information.

Work to be Performed

The Town of Hadley will identify minimum of five town properties that can be retrofitted to reduce pollutant loads of discharges into and from MS4 infrastructure (including street right-of-ways, conventional conveyances, outfalls and controls). The Town will evaluate and rank retrofits for control of stormwater discharges to first or second order streams, public swimming beaches, water supply sources, water quality limited waters and other critical areas. This inventory will be maintained in **Appendix D** and will be completed within 4 years of the effective date of the permit. This inventory will be updated continuously starting in Year 5. The following table shows the BMP, responsible parties and measurable goals.

Table 7-5. BMP Description – Complete Inventory of Properties for BMP Retrofit

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 5-6</u> : Target properties to reduce impervious areas	Planning Board, Conservation Commission, Department of Public Works	Complete inventory within 4 years of the effective date of the permit and update annually on retrofitted properties

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 Operations and Maintenance Programs

Permittees shall develop written operations and maintenance procedures for parks and open space, buildings and facilities, vehicles and equipment, winter road maintenance, stormwater infrastructure, and structural stormwater BMPs within 2 years of the effective permit date. This program shall also optimize catch basin cleaning and street sweeping, along with establishing proper storage techniques for cleaning residuals. All maintenance activities, inspections, and training shall be logged for annual reporting.

8.1.2 Stormwater Pollution Prevention Plans

Develop and implement Stormwater Pollution Prevention Plans (SWPPPs) for municipally-owned maintenance garages, public works yards, transfer stations within 2 years of the effective permit date.

8.2 Good Housekeeping and Pollution Prevention Program

The following sections outline how Hadley is meeting the requirements of the 2016 MS4 Permit to establish a Good Housekeeping and Pollution Prevention Program.

8.2.1 Complete Facilities O&M Procedures

Requirements

The permittee must complete an inventory of all parks and open space, buildings and facilities where pollutants are exposed to stormwater runoff, including those coming from vehicles and equipment, within 2 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 an Operation and Maintenance Plan within 2 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 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 keeping 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.

Work to be Performed

The Town has prepared a comprehensive written O&M Plan, a standalone document separate from this SWMP Plan, that meets the above requirements. This document also includes the inventory of relevant Town-owned properties. In addition, the Town's O&M Plan established requirements for use of slow release fertilizers on permittee owned properties and establish procedures to manage grass cuttings and leaf litter on permittee property within areas of town draining to the Long Island Sound watershed, a waterbody impaired for nitrogen. This plan also established requirements for use of slow release and phosphorus-free fertilizers on permittee owned properties and established procedures to manage grass cuttings and leaf litter, including prohibitions for blowing organic waste materials onto impervious surfaces for areas of town draining to the Lake Warner watershed, a waterbody impaired for phosphorus. The following table shows the BMP, responsible parties and measurable goals.

Table 8-1. BMP Description – Complete Written Facilities O&M Procedures

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-1:</u> Inventory open spaces, buildings and facilities, and vehicles and equipment	Department of Public Works	Complete inventory of open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit
<u>BMP 6-2:</u> Establish Operation and Maintenance Procedures	Department of Public Works	Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit

8.2.2 Complete Infrastructure O&M Procedures

Requirements

The permittee must establish written procedures as part of an Operation and Maintenance Plan within 2 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:

Street Sweeping (Appendix E)

- 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 1 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 2 times per year; once in the spring (following winter activities such as sanding) and at least once in the fall (Sept 1 – Dec 1; following leaf fall) for areas within the nitrogen-impaired watersheds; and
- For rural uncurbed roadways with no catch basins or limited access highways, either an evaluation to meet the minimum frequencies above or development and implementation of an inspection, documentation, and targeted sweeping plan within 2 years of the effective date and submitted with the Year 1 annual report.

Catch Basin Cleaning (Appendix F)

- 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 2 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.

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 are not discharged to receiving waters based on available MassDEP policies.

Winter Operation and Maintenance

- Establish and implement procedures for winter road maintenance including the use and storage of salt and sand
- Minimizing use of sodium chloride and other salts and evaluation of opportunities to use alternative materials; and
- Ensuring that snow disposal activities do not result in disposal of snow into waters of the United States.

Work to be Performed

The Town recently updated its existing street sweeping, catch basin cleaning, and winter O&M procedures in order to meet permit requirements. Street sweeping will continue under the existing Street Sweeping Prioritization Plan provided in **Appendix E** for at least several years, possibly expanded in Year 4 and beyond as a response to Lake Warner phosphorus TMDL requirements as outlined further in Section 9. Catch basin prioritization will also continue for the next several years as catch basin inspections continue according to the methodology and schedule outlined in the Catch Basin Optimization Plan provided in **Appendix F**. Results will be reviewed at the end of each year to determine recommended next steps. The following table shows the BMP, responsible parties and measurable goals.

Table 8-2. BMP Description – Complete Written Infrastructure O&M Procedures

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-3:</u> Review Infrastructure O&M Procedures	Department of Public Works	Create written O&M Plan for stormwater infrastructure within 2 years of the effective date of the permit
<u>BMP 6-4:</u> Catch Basin Cleaning	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually
<u>BMP 6-5:</u> Street Sweeping	Department of Public Works	Sweep all streets and parking lots at least annually and sweep all streets within the Long Island Sound watershed twice per year.
<u>BMP 6-6:</u> Road salt optimization program	Department of Public Works	Implement salt use optimization during winter maintenance operations

8.2.3 Stormwater Pollution Prevention Plans

Requirements

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.

Work to be Performed

The Town of Hadley has determined that one facility meets the above requirements, the Hadley Highway Garage and WWTP. A SWPPP has been prepared for this facility as a separate standalone document which should be updated when there is a significant change in design, construction, operation, or maintenance of the facility that affects the discharge or potential discharge of pollutants. This plan is made available in hardcopy at the Hadley Highway Garage and WWTP to members of federal, state, or local agencies during normal working hours for review upon request. Copies of the SWPPP are accessible to all persons responsible for implementing and administering it. The following table shows the BMP, responsible parties and measurable goals.

Table 8-3. BMP Description – Prepare SWPPPs for Regulated Facilities

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-7:</u> Assess regulated facilities to determine SWPPP eligibility	Department of Public Works	Complete facilities assessment within 2 years of the effective date of permit.
<u>BMP 6-8:</u> Develop SWPPPs for applicable facilities	Department of Public Works	Complete and implement within 2 years of the effective date of the permit

8.2.4 Structural Stormwater BMP Inspections

Requirements

The permittee must establish and implement written inspection and maintenance procedures and frequencies for all stormwater treatment structures, such as infiltration and detention basins, proprietary stormwater treatment structures, gravel wetlands, etc. at least annually.

Work to be Performed

The Town of Hadley currently has no Town-owned stormwater BMPs within the Town's regulated area. If required at a later date, the Town will complete an inventory (**Appendix G**) of structural stormwater BMPs and will develop a formalized inspection and maintenance procedures for the various types of BMPs located within the Town's regulated area. The O&M Plan also provides logs for BMP inspection and maintenance. The following table shows the BMP, responsible parties and measurable goals.

Table 8-4. BMP Description – Inspect Structural BMPs Annually

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-9:</u> Establish BMP O&M Procedures	Department of Public Works	Create written O&M Plan for stormwater BMPs within 2 years of the effective date of the permit
<u>BMP 6-10:</u> Inspect and maintain stormwater BMPs	Department of Public Works	Inspect and maintain treatment structures annually

BMP inspection Standard Operating Procedures (SOPs) and results are tracked under the standalone O&M Plan under separate cover.

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. TMDLs are prepared based on the priority assigned to the waterbody and are being completed over the course of several years.

As outlined in Section 2.3, the Town of Hadley is subject to the following TMDL and impaired waters requirements:

Table 9-1. TMDL and Impaired Waters Requirements

Waterbody Name	Impairment	2016 Permit Requirements
Long Island Sound	Nitrogen	Appendix F, Part B.I
Lake Warner	Phosphorus	Appendix F, Part A.II
Connecticut River	Escherichia coli	Appendix H, Part III
Fort River	Escherichia coli	Appendix H, Part III
Mill River	Escherichia coli	Appendix H, Part III

Thus, the Town of Hadley must implement control measures for discharges to approved TMDL waters and to impaired waters without a TMDL as summarized in the sections below.

9.2 Long Island Sound Nitrogen TMDL Requirements

The Town of Hadley is subject to the Long Island Sound nitrogen TMDL and thus is required to implement the following requirements as outlined under Appendix F, Part B.I of the 2016 Permit.

9.2.1 Additional or Enhanced BMPs

The Town of Hadley must include the following additional or enhanced BMPs, in addition to the 6 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 also consider the potential to reduce nitrogen discharges for properties within watersheds draining to nitrogen-impaired waterbodies.
- **Good Housekeeping and Pollution Prevention** – establish requirements for reducing fertilizer usage and/or using slow release fertilizers on permittee owned properties, procedures for properly managing grass cuttings and leaf litter on permittee 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.

9.2.2 Nitrogen Source Identification Report

The Town of Hadley must also prepare a Nitrogen Source Identification Report that generally does the following:

- 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 Connecticut 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.

This item must be completed by the end of Year 4.

9.2.3 Structural BMPs

Upon completion of the Nitrogen Source Identification Report, the Town must evaluate all properties identified under the report or using the procedures identified under Section 7.4.5 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 must provide a list of planned structural BMPs, along with a plan and schedule for implementation by the end of Year 5. At least 1 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.

Work to be Performed

Requirements for meeting the Long Island Sound nitrogen TMDL requirements are being performed according to the schedule in the 2016 Permit.

Table 9-2. TMDL Requirements – Long Island Sound Nitrogen

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 7-1</u> : TMDL Requirements – Long Island Sound Nitrogen	Department of Public Works, Information Technology, Planning Board, Conservation Commission, Building Department	Adhere to requirements in part B.I of Appendix F

9.3 Lake and Pond Phosphorus TMDL Requirements

To address the discharge of phosphorus from its MS4, the Town of Hadley must develop a Lake Phosphorus Control Plan (LPCP) designed to reduce the amount of phosphorus in stormwater discharges from its MS4 to the phosphorus-impaired waterbody. This Plan shall be completed and fully implemented as soon as possible but no later than 15 years after the permit effective date.

9.3.1 LPCP Requirements

The following provides a brief summary of permit requirements to be implemented:

- Item 1 Legal Analysis** – Identify regulatory mechanisms that may be necessary to implement the LPCP, complete a legal analysis within 2 years of the permit effective date, and adopt changes by the end of the permit term.
- Item 2 Funding Source Assessment** – Identify funding mechanisms that will be used to fund LPCP implementation, describe the steps to be taken in implementing the funding plan.
- Item 3 Define LPCP Scope, Baseline Load, Reduction Requirement, and Allowable Load** – Determine whether to implement the LPCP town wide or only in the UA and calculate the corresponding Baseline Phosphorus Load, Stormwater Phosphorus Reduction Requirement and Allowable Phosphorus Load corresponding to the LPCP Area. Note that although the UA-Only option has a lower reduction requirement, there are also less options to implement BMPs as the available area of town is smaller. This requirement should be completed within 4 years of permit effective date
- Item 4 Non-Structural Controls** – Determine non-structural stormwater controls to help reduce phosphorus, including planned measures, areas where measures

will be implemented, and expected annual phosphorus reductions within 6 years of effective permit date.

- Item 5 Structural Controls** – Priority rank areas and infrastructure where potential structural phosphorus controls could be implemented, including an assessment of site suitability for phosphorus control measures based on soil types and other factors. Determine where structural controls shall be implemented and annual phosphorus reductions provided by each.
- Item 6 Operation and Maintenance Program** – Establish an O&M Program for current and planned structural BMPs, including an inspection and maintenance schedule with program or department responsible.
- Item 7 Written Plan** – Develop a schedule that addresses the above items within 4 years of the effective permit date and prepare a written plan to determine implementation cost estimate within 5 years of the effective permit date. Provide an updated written LPCP within 10 years of the effective permit date.
- Item 8 Implementation and Performance Evaluation** – Evaluate LPCP effectiveness by tracking phosphorus reductions due to implementing structural BMPs annually, beginning 6 years after the effective date.

9.3.2 Reporting

The Town of Hadley shall include a progress report in each Annual Report on the planning and implementation of the LPCP. Once the LPCP has started implementation 5 years after the permit effective date, the Annual Report shall also include the following:

- Non-structural control measures implemented during the reporting year along with the calculated phosphorus reduction;
- Structural control measures implemented during the reporting year with location information, calculated phosphorus reduction, and date of last inspection and maintenance;
- Phosphorus load increases due to development; and
- Estimated yearly phosphorus export rate accounting for development and implementation of both non-structural and structural BMPs.

Work to be Performed

Requirements for meeting the Lake and Pond Phosphorus TMDL requirements are being performed according to the schedule in the 2016 Permit.

Table 9-3. Water Quality Limited Waterbody Requirements – Phosphorus

BMP Description	Responsible Parties	Measurable Goal
BMP 7-2: Water Quality Limited Waterbody Requirements – Phosphorus	Department of Public Works, Planning Board, Zoning Board, Conservation Commission, Building Department	Adhere to requirements in part A.II of Appendix F

9.4 E.coli Water Quality Limited Waterbodies Requirements

The Town of Hadley currently has 3 waterbodies, Connecticut River, Fort River, and Mill River, listed as impaired for E.coli. Thus, the Town is required to implement the following requirements as outlined under Appendix H, Part III of the 2016 Permit.

9.4.1 Additional or Enhanced BMPs

The Town of Hadley must include the following additional or enhanced BMPs, in addition to the 6 MCMs outlined previously:

- **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 bacteria or pathogen impaired segments as “Problem Catchments” or “High” priority.

Work to be Performed

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

Table 9-4. TMDL Requirements – Fecal Coliform

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 7-3</u> : TMDL Requirements – Fecal Coliform	Department of Public Works, Information Technology, Town Clerk, Planning Board, Conservation Commission, Building Department	Adhere to requirements in part III of Appendix H

10 Annual Reporting

The permittee shall submit annual reports each year of the permit term. The reporting period is 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 28 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 H**:

- 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 minimum measures:
 - 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 bylaw 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 permittee 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 Hadley'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 7 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 the following link for a copy of the 2016 MA MS4 Permit:

<https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities											
BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Report Section	Year / Schedule					
						1	2	3	4	5	6
						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	1. Broadcast informational stormwater videos on public access television channel.	Hadley Media (HPAT)	Televisе informational video for a minimum of 2 airings per year	3.4.1	*	*	*	*	*	*
		2. Provide fact sheets on pet waste management with all dog registrations and renewals	Town Clerk	Provide information with all applications and renewals		*	*	*	*	*	*
		3. Provide relevant stormwater information to different audiences via social media.	Information Technology	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	*
		4. Provide comprehensive stormwater information on the Town's website, including effects of outdoor activities such as lawn care 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.	Information Technology	Continue to update and maintain the websites		*	*	*	*	*	*
1-2	Businesses, Institutions, and Commercial Education Program	1. Provide comprehensive stormwater information on the Town's website, including effects of outdoor activities such as lawn care on water quality; 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.	Information Technology	Continue to update and maintain the websites	3.4.2	*	*	*	*	*	*
		2. Provide relevant stormwater information to different audiences via social media.	Information Technology	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	*
1-3	Developer and Construction Education Program	1. Distribute erosion control fact sheets to developers with building permit applications	Planning Board, Conservation Commission, Building Department	Provide information with all applications	3.4.3	*	*	*	*	*	*
		2. Provide comprehensive stormwater information on the Town's website, including 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).	Information Technology	Continue to update and maintain the websites		*	*	*	*	*	*
		3. Provide relevant stormwater information to different audiences via social media.	Information Technology	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	*
1-4	Industrial Education Program	1. Provide comprehensive stormwater information on the Town's website, including equipment inspection and maintenance; proper storage of industrial materials; proper management and disposal of wastes; proper management of dumpsters; minimization of use and 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; and information about EPA’s CGP.	Information Technology	Continue to update and maintain the websites	3.4.4	*	*	*	*	*	*
		2. Provide relevant stormwater information to different audiences via social media.	Information Technology	Follow statewide "Think Blue" campaign on social media platforms		*	*	*	*	*	*

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2. Public Participation and Involvement											
2-1	Make SWMP Publicly Available	1. Post SWMP Plan on Town website, along with contact name, email address and/or phone number of a contact person at the Town to contact for information or submit comments.	Board of Selectmen, Information Technology, Department of Public Works	Annual review of stormwater management plan and posting on website. Allow public to comment on the plan at least annually	4.4.1	*	*	*	*	*	*
2-2	Household Hazardous Waste Collection Event	1. Allow annual participation in at least one household hazardous waste collection event.	Department of Public Works	Allow public to drop off hazardous waste for proper disposal at least once a year	4.4.2	*	*	*	*	*	*
2-3	Roadside Cleanup Event	1. Sponsor volunteer roadside cleanups at least once per year.	Board of Selectmen	Perform roadside cleanups at least once a year	4.4.3	*	*	*	*	*	*
2-4	Public Comment	1. Provide contact information for reporting illicit discharges and other stormwater-related concerns.	Department of Public Works	Hold public meetings at least once a month.	4.4.4	*	*	*	*	*	*
2-5	NPDES Steering Committee	1. Establish NPDES Steering Committee to oversee 2016 MS4 Permit implementation, including members from applicable town boards and departments.	Department of Public Works, Town Administrator	Continue overseeing Permit implementation	4.4.5	*	*	*	*	*	*

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3. Illicit Discharge Detection and Elimination											
3-1	Enforce Current IDDE Bylaw	1. Continue enforcing existing “Illicit Connections and Discharges to Storm Sewer System” IDDE bylaw.	Department of Public Works, Planning Board, Board of Health	Continue enforcing existing IDDE bylaw	5.4.1	*	*	*	*	*	*
3-2	Phase I Storm Sewer System Map	1. Delineate catchment areas based on topography for each MS4 outfall and map in GIS.	Department of Public Work	Updated map within 2 years of effective date of permit	5.4.2	*					
		2. Update outfalls, conveyances receiving waters, interconnections, MS4-owned BMPs & initial catchment delineations.				*	*				
3-3	Phase II Storm Sewer System Map	1. Update outfall spatial location, pipes, manholes, catch basins, refined catchment delineations as new information becomes available.	Department of Public Works	Updated map within 10 years of effective date of permit	5.4.2	*	*	*	*	*	*
3-4	Complete Sanitary Sewer Overflow Inventory	1. Complete an inventory of Sanitary Sewer Overflows (SSOs) that have discharged to the MS4 within the previous 5 years and update annually.	Department of Public Works, Board of Health	Develop SSO inventory and complete within 1 year of effective date of permit and update annually	5.4.3	*	*	*	*	*	*
3-5	Written IDDE Program	1. Prepare written IDDE Plan to include procedures on assessing and priority ranking outfalls and interconnections, dry and wet weather outfall sampling, catchment investigations, system vulnerability factor assessment, identification of an illicit discharge, illicit discharge removal, and ongoing screening requirements.	Department of Public Works	Complete within 1 year of the effective date of permit and update as required	5.4.4	*					
3-6	Outfall / Interconnection Inventory and Ranking	1. Develop an outfall and interconnection inventory that identifies each outfall and interconnection discharging from the MS4, records its location and condition and provides a framework for tracking inspections, screenings and other activities under the IDDE program.	Department of Public Works	Identification of outfalls and initial ranking by July 1, 2019	5.4.4	*					
		2. Classify/rank outfalls. Initial ranking by end of Year 1. Update ranking annually with new information.				*	*	*	*	*	*
3-7	Implement IDDE Program	1. Inspect key catchment structures (manholes, catch basins) during dry weather conditions. Where flowing water is observed, collect samples for analysis.	Department of Public Works, Board of Health	Implement catchment investigations according to program and permit conditions (Problem Outfalls by July 1, 2025, all outfalls by July 1, 2028)	5.4.4		*	*	*	*	*
		2. Inspect key catchment structures (manholes, catch basins) in all catchments during dry weather conditions. Where flowing water is observed, collect samples for analysis.					*	*	*	*	*
3-8	Dry Weather Screening	1. Inspect drainage outfalls classified as High or Low priority during dry weather.	Department of Public Works	Complete in accordance with outfall screening procedure and permit conditions by July 1, 2021	5.4.5	*	*	*			
		2. Investigate potential illicit discharges, if any.				*	*	*	*	*	*
		3. Enforce removal of illicit discharges, if any.				*	*	*	*	*	*
3-9	Wet Weather Screening	1. 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.	Department of Public Works	Complete in accordance with outfall screening procedure within 10 years of the effective permit date	5.4.5						*
3-10	Ongoing Screening	1. Upon completion of catchment investigations, reprioritize outfalls for ongoing screening.	Department of Public Works	Conduct ongoing dry and wet weather outfall screening upon completion of the IDDE program	5.4.5						*
		2. Continue performing dry and wet weather sampling according to the new prioritization at least once every 5 years.									*
3-11	Perform IDDE Training	1. Provide annual training to employees involved in the IDDE program.	Department of Public Works, Board of Health	Train applicable employees annually	5.4.6	*	*	*	*	*	*

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4. Construction Site Stormwater Runoff Control												
4-1	Develop and Enforce Construction Bylaw	1. Review and update existing Erosion and Sediment Control for Stormwater Management bylaw as necessary to meet permit requirements.	Planning Board, Conservation Commission, Building Department	Complete bylaw updates within 1 year of the effective date of the permit	6.4.1	*						
4-2	Develop Written Procedures for Site Plan Review	1. Review and update existing requirements mandating site plan review and make changes as needed, such as incorporating additional information submitted by the public.	Planning Board, Conservation Commission, Building Department	Establish procedures for site plan review within 1 year of the effective date of the permit	6.4.2	*						
4-3	Develop Written Procedures for Site Inspections and Enforcement	1. Review and update existing requirements mandating site inspections, enforcement, and requirements for submittal of monthly inspection reports as needed	Department of Public Works	Establish procedures for site inspections and enforcement within 1 year of the effective date of the permit	6.4.3	*						
4-4	Establish a Sediment and Erosion Control Program	1. Review existing requirements for development of an Erosion and Sediment Control Plan to determine if it meets all permit requirements and make changes as needed	Planning Board, Conservation Commission, Building Department	Establish procedures for development of an erosion and sediment control program within 1 year of the effective date of the permit	6.4.4	*						
4-5	Develop Procedures for Waste Control	1. Establish requirements to control construction site wastes within 1 year of the effective date of the permit	Planning Board, Conservation Commission, Building Department	Establish requirements to control construction site wastes within 1 year of the effective date of the permit	6.4.4	*						

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5. Stormwater Management in New Development and Redevelopment												
5-1	Develop and Enforce Post-Construction Bylaw	1. Review existing Erosion and Sediment Control for Stormwater Management bylaw and incorporate specific design requirements outlined in the final permit regarding new development and redevelopment tied to the Massachusetts Stormwater Handbook. Include a requirement that stormwater management BMPs that ultimately discharge to a nitrogen impaired water body be optimized for nitrogen removal.	Planning Board, Conservation Commission, Building Department	Complete bylaw updates within 2 years of the effective date of the permit	7.4.1	*	*					
5-2	Require Stormwater As-Built Plan Submittal	1. Review existing Erosion and Sediment Control for Stormwater Management bylaw and make changes as necessary to require submittal of as-built drawings.	Planning Board, Conservation Commission, Building Department, Department of Public Works	Require submittal of as-built plans for completed projects within 2 years of completion	7.4.2	*	*					
5-3	Require Long Term Operation and Maintenance	1. Review existing Erosion and Sediment Control for Stormwater Management bylaw and make changes as necessary to require long term operation and maintenance, such as addressing funding sources.	Planning Board, Conservation Commission, Building Department, Department of Public Works	Require submittal of operation and maintenance plans to ensure long term maintenance within 1 year of the effective date of the permit	7.4.3	*	*					
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, Zoning Board	Complete regulatory updates within 4 years of the effective date of the permit	7.4.4		*	*				
		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	Allow Green Infrastructure	1. Review existing by-laws, regulations and guidance to determine the feasibility of making green practices allowable.	Planning Board, Conservation Commission, Zoning Board, Building Department	Complete regulatory updates within 4 years of the effective date of the permit	7.4.4		*	*				
		2. Prepare a report assessing existing local regulations to determine the feasibility of allowing green roofs, infiltration practices, and water harvesting devices.							*			
5-6	Target Properties to Reduce Impervious Area	1. Identify 5 properties for potential retrofits to stormwater impacts, as well as nitrogen impacts to the Connecticut River.	Planning Board, Conservation Commission, Department of Public Works	Complete inventory within 4 years of the effective date of the permit and update annually on retrofitted properties	7.4.5				*			
		2. Track and report annually properties that have been modified or retrofitted with BMPs.							*	*	*	

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities											
BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Report Section	Year / Schedule					
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						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	Inventory Open Spaces, Buildings and Facilities, and Vehicles and Equipment	1. Inventory all permittee-owned parks and open spaces, building and facilities (including storm drains), and vehicles and equipment in the regulated area.	Department of Public Works	Complete inventory of open spaces, buildings and facilities, and vehicles and equipment within 2 years of the permit effective date.	8.3.1		*				
6-2	Establish Operation and Maintenance Procedures	1. Evaluate practices at MS4 properties (parks and open spaces, building and facilities, vehicles and equipment) and develop written Facilities O&M Plan.	Department of Public Works	Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the permit effective date.	8.3.1		*				
		2. Distribute written O&M/SOPs as part of employee training.					*				
		3. Update inventory annually.					*	*	*	*	*
6-3	Review Infrastructure O&M Procedures	1. Develop written O&M procedures or SOPs for the storm drain system, roadways and existing Town-owned BMPs (e.g., catch basin cleaning, street sweeping, winter road maintenance, stormwater BMPs).	Department of Public Works	Create written O&M Plan for stormwater system within 2 years of the permit effective date.	8.3.2		*				
		2. Distribute written O&M/SOPs as part of employee training.					*				
6-4	Catch Basin Cleaning	1. Establish a cleaning schedule with a goal of maintaining catch basins so that they remain less than 50% full of sediment.	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually.	8.3.2	*					
		2. Clean catch basins as needed according to schedule.				*	*	*	*	*	*
		3. Properly manage storage of catch basin residuals.				*	*	*	*	*	*
6-5	Street Sweeping	1. Develop street sweeping prioritization for high priority areas and areas subject to TMDL and/or water quality limited requirements.	Department of Public Works	Sweep all streets and parking lots at least annually and sweep all streets twice a year if within nutrient-impaired waterbody watersheds.	8.3.2	*					
		2. Sweep streets once a year in spring and twice a year where drainage is to a nutrient-impaired water.				*	*	*	*	*	*
		3. Properly manage storage of street sweeping residuals.				*	*	*	*	*	*
6-6	Road Salt 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.	Department of Public Works	Implement salt use optimization during winter maintenance operations.	8.3.2	*					
		2. Implement winter operation and maintenance items.				*	*	*	*	*	*
6-7	Assess Regulated Facilities to Determine SWPPP Eligibility	1. 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.	Department of Public Works	Document whether a SWPPP is needed and where required.	8.3.2		*				
6-8	Develop SWPPPs for Applicable Facilities	1. Complete SWPPP or document No Exposure as applicable.	Department of Public Works	Prepare SWPPP if needed by July 1, 2020.	8.3.3		*				
6-9	Establish BMP O&M Procedures	1. Establish written inspection and maintenance procedures and frequencies for inspection of all structural stormwater BMPs.	Department of Public Works	Create written O&M Plan for stormwater BMPs within 2 years of the permit effective date.	8.3.4		*				
6-10	Inspect and Maintain Stormwater BMPs	1. Annually inspect MS4-owned stormwater treatment BMPs. Document inspections and maintenance performed.	Department of Public Works	Inspect BMPs annually and maintain as needed.	8.3.4		*	*	*	*	*

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities											
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						1	2	3	4	5	6
						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 Controls											
7-1	Discharges to Approved TMDL Waterbodies - Lake and Pond Phosphorus (Lake Warner)	1. Lake Phosphorus Control Plan (LPCP) - Legal Analysis. Identify regulatory mechanisms that may be necessary to implement the LPCP	Department of Public Works, Planning Board, Zoning Board, Conservation Commission, Building Department	Complete a legal analysis within 2 years of the permit effective date, and adopt changes by the end of the permit term.	9.2.1	*					
		2. LPCP - Funding Source Assessment. Identify funding mechanisms that will be used to fund LPCP implementation.		Complete funding source assessment within 3 years of permit effective date.		*	*				
		3. LPCP - Define Scope and Requirements. Determine whether to implement the LPCP town wide or only in the UA and calculate the corresponding Baseline Phosphorus Load, Stormwater Phosphorus Reduction Requirement and Allowable Phosphorus Load corresponding to the LPCP Area.		Define LPCP area within 4 years of permit effective date.			*	*			
		4. LPCP - Non-Structural Controls. Determine non-structural stormwater controls to help reduce phosphorus, including planned measures, areas where measures will be implemented, and expected annual phosphorus reductions.		Determine non-structural controls within 5 years of permit effective date.				*	*		
		5. LPCP - Structural Controls. Priority rank areas and infrastructure where potential structural phosphorus controls could be implemented. Determine where structural controls shall be implemented and annual phosphorus reductions provided by each.		Determine structural controls within 5 years of permit effective date.				*	*		
		6. LPCP - Operation and Maintenance Program. Establish an O&M Program for current and planned structural BMPs, including an inspection and maintenance schedule with program or department responsible.		Establish O&M Program within 5 years of permit effective date.				*	*		
		7. LPCP - Written Plan. Develop a schedule that addresses the above items and prepare a written plan to determine implementation cost estimate.		Develop schedule within 4 years of permit effective date. Prepare implementation cost estimate within 5 years of permit effective date.			*	*	*		
		8. LPCP - Implementation and Performance Evaluation. Evaluate LPCP effectiveness by tracking phosphorus reductions due to implementing structural BMPs annually.		Begin tracking phosphorus reductions 6 years after the permit effective date						*	*
		9. Annual Reporting. Include a progress report in each Annual Report on the planning and implementation of the LPCP.		Include LPCP progress report in each Annual Report.	9.2.2	*	*	*	*	*	*
		10. Annual Reporting. Include non-structural control measures implemented, structural control measures implemented, phosphorus load increases due to development, and estimated yearly phosphorus export rate in each Annual Report.		Include additional LPCP progress once implementation has started, 5 years after permit effective date.						*	*

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7 (continued). TMDL and Impaired Waters Controls											
7-2	Discharges to Approved TMDL Waterbodies - Nitrogen (Long Island Sound)	1. Enhanced BMPs - Public Education. Include fertilizer use, disposal of grass clippings and leaf litter, and pet waste management with the Residential and Commercial public education programs.	Planning Board, Conservation Commission, Building Department, Information Technology, Hadley Media, Town Clerk	Distribute materials with Residential education program.	9.3.1	*	*	*	*	*	*
		2. Enhanced BMPs - Stormwater Management in New Development and Redevelopment. Include a requirement in the regulatory mechanism that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal.	Planning Board, Conservation Commission, Building Department	Complete bylaw updates within 2 years of the permit effective date.		*					
		3. Enhanced BMPs - Consider BMPs to reduce nitrogen discharges when identifying MS4 properties for retrofits.	Planning Board, Conservation Commission, Department of Public Works	Evaluate stormwater BMPs for nitrogen removal during facility inventory within 2 years of the effective date of the permit		*	*				
		4. Enhanced BMPs - Good Housekeeping and Pollution Prevention. Incorporate nitrogen reduction practices into Town good housekeeping practices such as fertilizer use and managing grass cuttings and leaf litter.		Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective permit date.			*				
		5. Enhanced BMPs - Good Housekeeping and Pollution Prevention. Increase street sweeping to twice per year (spring and fall) for catchment areas that discharge to MS4 areas within the Long Island Sound watershed.	Department of Public Works	Sweep all streets and parking lots within the Long Island Sound watershed twice per year.		*	*	*	*	*	*
		6. Prepare a nitrogen Source Identification Report to identify high priority areas within the community, determines impervious areas, evaluates results of screening activities performed under minimum measure 3, and outlines potential retrofit opportunities.	Planning Board, Conservation Commission, Department of Public Works	Complete Nitrogen Source Identification Report within 4 years of the permit effective date.	9.3.2		*	*	*	*	*
		7. Evaluate municipal properties for potential BMPs to construct one that will treat nitrogen, determine estimated costs, and determines engineering and regulatory feasibility.		Evaluate municipal facilities within 5 years of the permit effective date to determine candidates for a nitrogen BMP.	9.3.3			*	*		
		8. Design and install at least one demonstration BMP to treat nitrogen from stormwater runoff.		Installed demonstration BMP within 6 years of the effective date of the permit.					*	*	
		9. Track BMPs installed, including type, total area treated, design storage volume and estimated nitrogen removal and report annually to EPA and MassDEP.		Summary progress table.						*	
7-3	Discharges to Water Quality Limited Waterbodies - Bacteria (Connecticut River, Fort River, Mill River)	2. Enhanced BMPs - Illicit Discharge, Detection, and Elimination. Designate catchment draining to bacteria/pathogen impaired segments as "Problem Catchments" or "High" priority catchments in IDDE ranking.	Department of Public Works, Planning Board, Board of Health	Complete bylaw updates within 2 years of the effective date of the permit	9.4.1	*	*				
		1. Enhanced BMPs - Public Education. Include management of pet waste and septic system maintenance with the Residential public education program.	Planning Board, Conservation Commission, Building Department, Information Technology, Hadley Media, Town Clerk	Distribute materials with Residential and Commercial education programs.		*	*	*	*	*	*

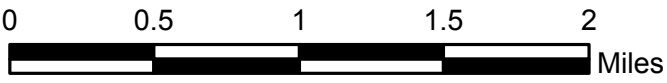
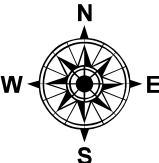
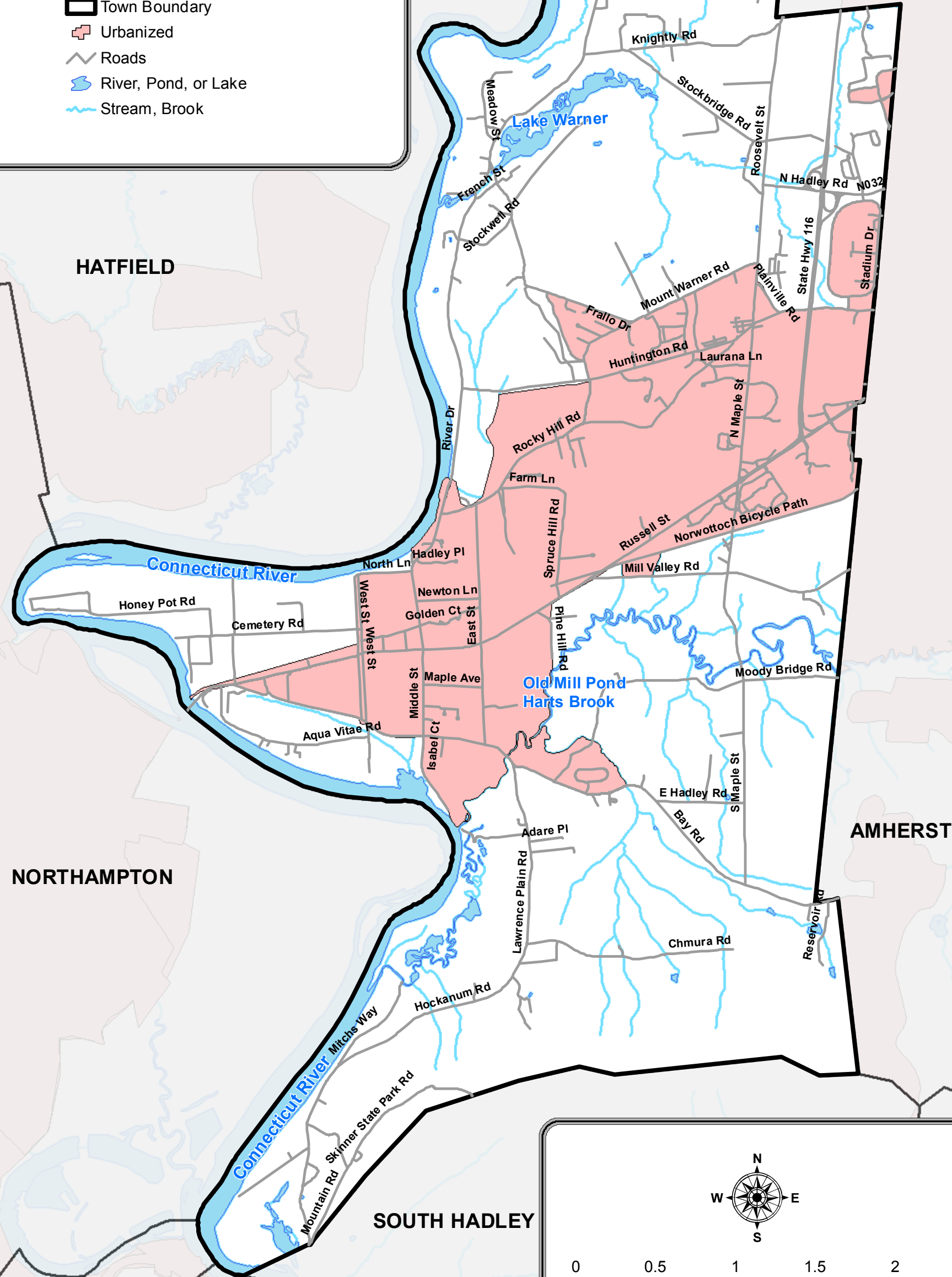
Figure 1-1, Urbanized Area
Hadley, MA



Comprehensive Environmental Inc.

LEGEND

- Town Boundary
- Urbanized
- Roads
- River, Pond, or Lake
- Stream, Brook



Data Source: CEI, MassGIS, Town of Hadley

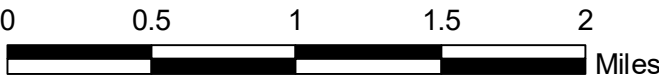
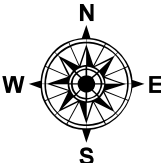
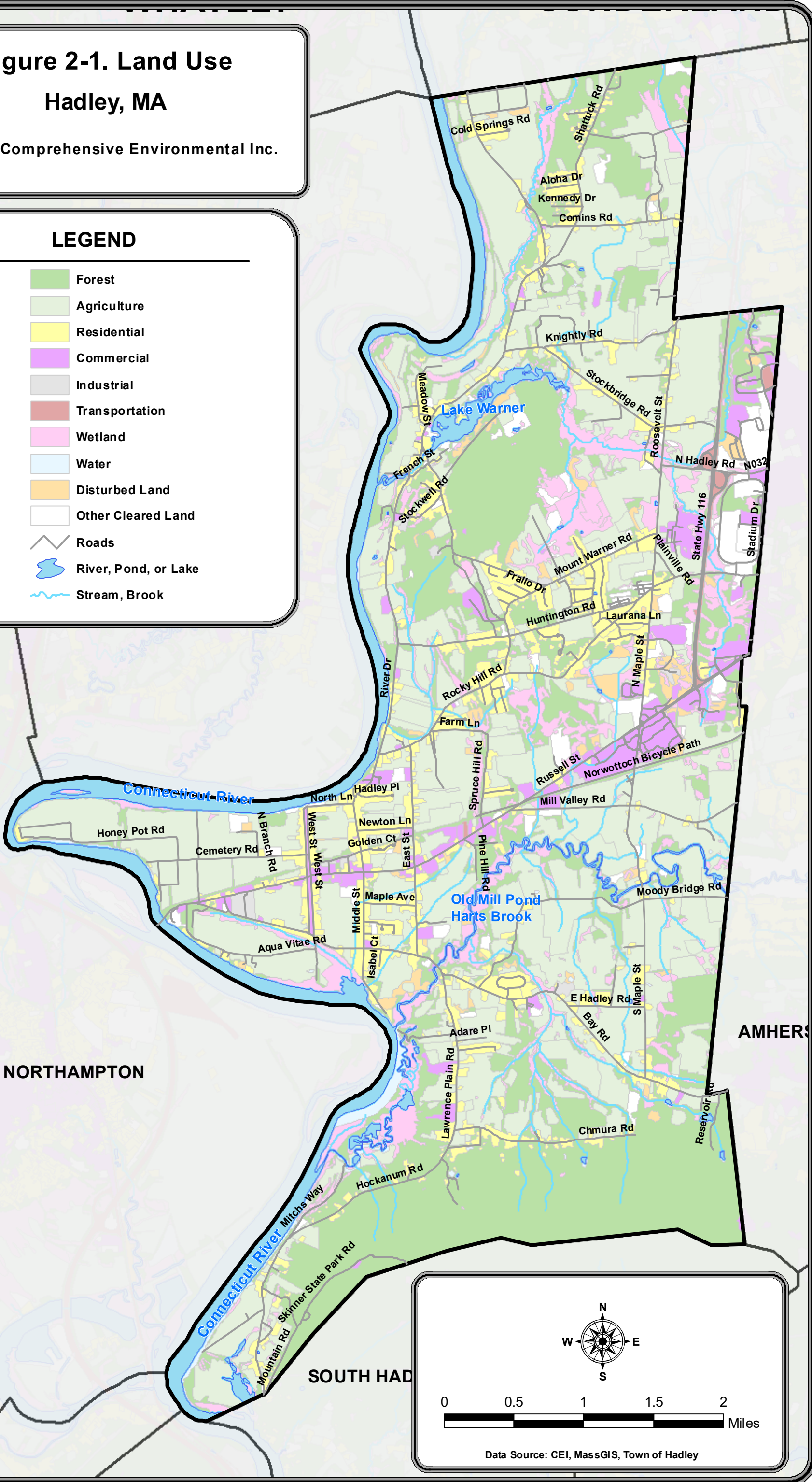
Figure 2-1. Land Use
Hadley, MA



Comprehensive Environmental Inc.

LEGEND

- Forest
- Agriculture
- Residential
- Commercial
- Industrial
- Transportation
- Wetland
- Water
- Disturbed Land
- Other Cleared Land
- Roads
- River, Pond, or Lake
- Stream, Brook



Data Source: CEI, MassGIS, Town of Hadley

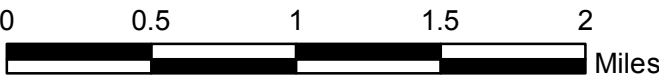
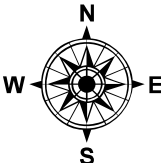
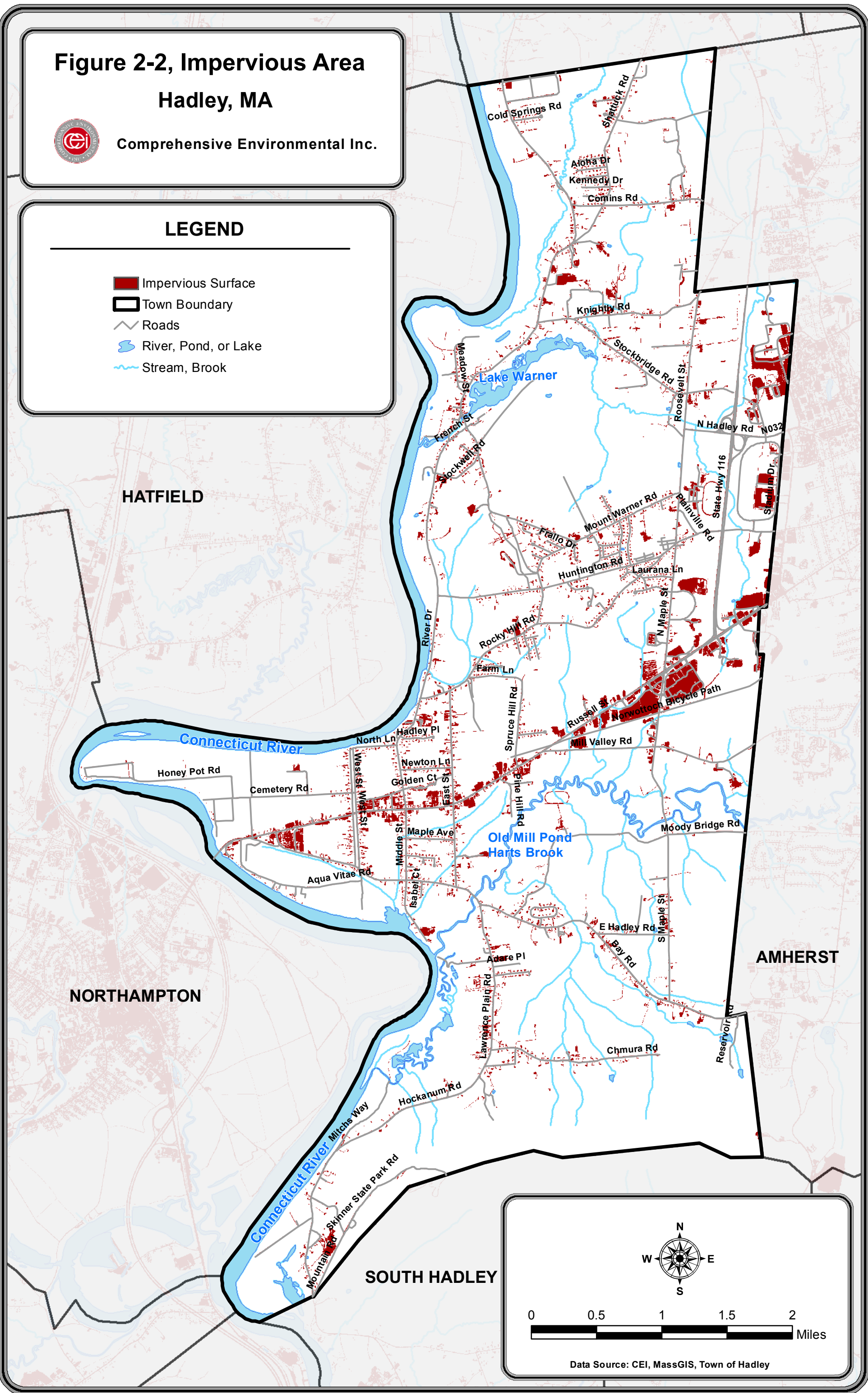
Figure 2-2, Impervious Area
Hadley, MA



Comprehensive Environmental Inc.

LEGEND

- Impervious Surface
- Town Boundary
- Roads
- River, Pond, or Lake
- Stream, Brook



Data Source: CEI, MassGIS, Town of Hadley

Figure 2-3, Resource Waters
Hadley, MA

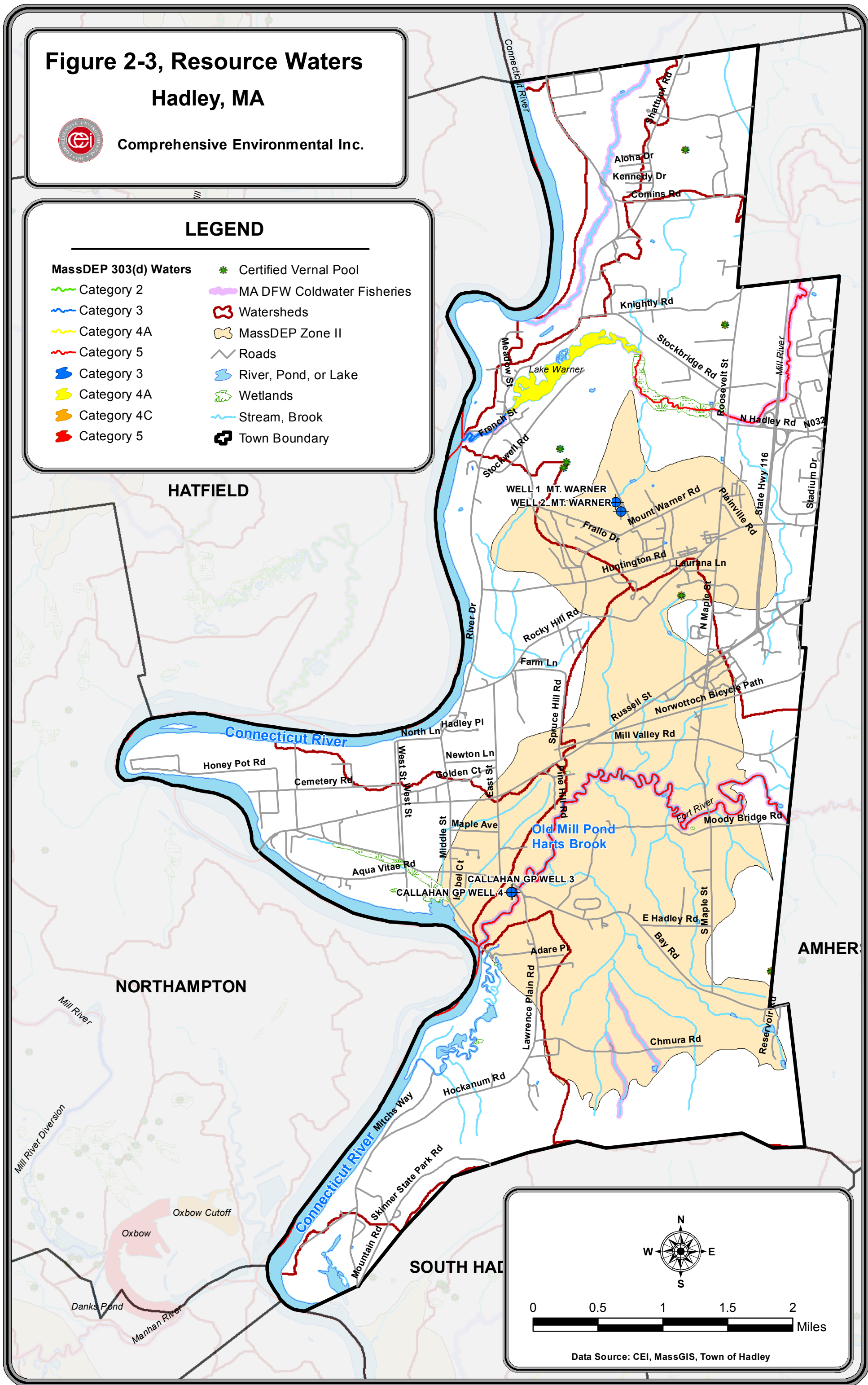


Comprehensive Environmental Inc.

LEGEND

- MassDEP 303(d) Waters**

 - Category 2
 - Category 3
 - Category 4A
 - Category 5
 - Category 3
 - Category 4A
 - Category 4C
 - Category 5
- Certified Vernal Pool
 - MA DFW Coldwater Fisheries
 - Watersheds
 - MassDEP Zone II
 - Roads
 - River, Pond, or Lake
 - Wetlands
 - Stream, Brook
 - Town Boundary



Appendix A

Notice of Intent and Authorization to Discharge

Part I: General Conditions

General Information

Name of Municipality or Organization: State:

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Fax Number:

Other Information

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

Eligibility Determination

Endangered Species Act (ESA) Determination Complete?

Eligibility Criteria (check all that apply): ☐ A ☒ B ☐ C

National Historic Preservation Act (NHPA) Determination Complete?

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

Web address where MS4 map is published:
If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with NOI submission (see section V for submission options)

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? (Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit) Effective Date or Estimated Date of Adoption (MM/DD/YY):

Construction/Erosion and Sediment Control (ESC) Authority Adopted? (Part II, III, IV or V, Subpart B.4.(a.) of 2003 permit) Effective Date or Estimated Date of Adoption (MM/DD/YY):

Post- Construction Stormwater Management Adopted? (Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit) Effective Date or Estimated Date of Adoption (MM/DD/YY):

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](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
Harts Brook	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MA34-27 (Fort River), via unnamed tributaries	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MA34-04, (Connecticut River), via unnamed tributaries	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PCB in Fish Tissue
MA34-04 (Connecticut River), direct	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PCB in Fish Tissue
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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 Implementation
Brochures/Pamphlets	Distribute fact sheets or brochures on pet waste pickup with dog licenses	Residents	Town Clerk	Provide information with all applications and renewals	2018
Videos	Broadcast informational videos on public access channel	Residents	Hadley Media (HPAT)	Televise informational video for a minimum of 2 airings per year	2018
Web Page	Provide information on website related to septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, and car washing	Residents	Information Technology	Creation of website with periodic updates	2018

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	Information Technology	Creation of website with periodic updates	2018
Web Page	Provide information on website related to erosion and sediment control, Low Impact Development, and the Construction General Permit	Developers (construction)	Information Technology	Creation of website with periodic updates	2018
Web Page	Provide web information on equipment maintenance and inspection, material storage, solid waste handling, salt usage, benefits of onsite infiltration, management of parking lot surfaces, and EPA's MSGP.	Industrial	Information Technology	Creation of website with periodic updates	2018
Social Media	Provide relevant stormwater information to different audiences via social media.	Residents, Businesses, Institutions, Commercial Facilities, Developers (construction)	Information Technology	Follow statewide "Think Blue" campaign on social media platforms.	2019
Brochures/Pamphlets	Distribute fact sheets or brochures on erosion and sediment control with permit applications	Developers (construction)	Planning Board, Conservation Commission, Building Department	Provide information with all applications	2018

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

Part III: Stormwater Management Program Summary *(continued)*

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Imple- mentation
Public Review	SWMP Review	Board of Selectmen, Department of Public Works	Allow annual review of stormwater management plan, allow the public to comment and televise all meetings	2018
Public Participation	Provide SWMP Plan on website for review with contact information f	Information Technology, Department of Public Works	Allow public to comment on stormwater management plan annually	2018
Public Participation	Stormwater Committee/Task Force	Department of Public Works, Town Administrator	Established a NPDES Steering Committee to oversee permit implementation including members from applicable town boards and departments	2018
Public Participation	Hold periodic Board of Selectmen meetings where the public may co	Board of Selectmen	Meetings held at least monthly	2018
Public Participation	Hold annual Earth Day roadside cleanup	Board of Selectmen	Perform roadside cleanups at least once per year	2018
Public Participation	Allow community participation in annual hazardous waste collection	Department of Public Works	Allow annual participation in at least one household hazardous waste event	2018
Public Participation	Provide contact information for reporting of illicit discharges	Department of Public Works	Contact information provided on website and in other IDDE-related fact sheets and brochures	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 Implementation
SSO inventory	Develop SSO inventory in accordance of permit conditions	Department of Public Works, Board of Health	Complete within 1 year of effective date of permit	2018
Storm sewer system map	Create map and update during IDDE program completion	Department of Public Works	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	Department of Public Works	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	Department of Public Works, Board of Health	Complete 10 years after effective date of permit	2020
Employee training	Train employees on IDDE implementation	Department of Public Works, Board of Health	Train annually	2018
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Department of Public Works	Complete 3 years after effective date of permit	2019
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Department of Public Works	Complete 10 years after effective date of permit	2024
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Department of Public Works	Complete ongoing outfall screening upon completion of IDDE program	2024
IDDE Ordinance/Bylaw	Enforce existing IDDE bylaw	Department of Public Works, Planning Board, Board of Health	Continue to enforce IDDE bylaw, created July 5, 2005	2018

[illegible]

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 Implementation
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Department of Public Works	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Planning Board, Conservation Commission, Building Department	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	Planning Board, Conservation Commission, Building Department	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	Planning Board, Conservation Commission, Building Department	Complete within 1 year of the effective date of permit	2018
Construction Ordinance/Bylaw	Enforce existing Erosion and Sediment Control for Stormwater Management bylaw	Planning Board, Conservation Commission, Building Department	Continue to enforce IDDE bylaw, created July 5, 2005	2018

[illegible]

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 Implementation
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	Planning Board, Conservation Commission, Building Department, Department	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	Planning Board, Conservation Commission, Department of Public Works	Complete 4 years after effective date of permit and report annually on retrofitted properties	2019
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, Zoning Board, Building Department	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, Zoning Board	Complete 4 years after effective date of permit and implement recommendations of report	2020

[illegible]

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

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	Department of Public Works	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	Department of Public Works	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	Department of Public Works	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	Department of Public Works	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	Department of Public Works	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 permittee-owned parking lots in accordance with permit conditions	Department of Public Works	Sweep all streets and permittee-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	Department of Public Works	Implement salt use optimization during deicing season	2018

[illegible]

Part III: Stormwater Management Program Summary (continued)

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.**

[illegible]

Part III: Stormwater Management Program Summary (continued)

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.**

[illegible]

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1 and 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.

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

Page 19 of 19

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:

David Nixon

Title:

Town Administrator

Signature:

David Glyn Nixon

Date:

9/5/18

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

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



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- Energy & Sustainability
- Hazardous Waste
- Permitting & NEPA
- Stormwater & LID
- Transportation
- Water & Wastewater
- Watershed Restoration

Wednesday, August 08, 2018

David Simmons
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

RE: Informal Endangered Species Consultation – Hadley, MA

Dear Mr. Simmons,

As required by the federal 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit (2016 MS4 Permit) issued by the Environmental Protection Agency (EPA), communities must meet certain requirements under the Clean Water Act and Endangered Species Act (ESA) to ensure that activities undertaken do not adversely affect endangered and threatened species or critical habitat. This permit requires that applicants applying for permit coverage must assess the impacts of their stormwater discharges and discharge-related activities on federally listed endangered and threatened species ("listed species") and designated critical habitat ("critical habitat") to ensure that these goals are met.

The 2016 MS4 Permit provides guidance on how to meet requirements of the ESA which in part requires communities with certain endangered species located within the "action area" (in this case, defined as the entirety of the community's regulated urbanized area) to contact the United States Fish and Wildlife Services (USFWS) for a formal or informal consultation to determine that permit activities will result in either a "no jeopardy" opinion or "not likely to adversely affect" listed species or critical habitat. These procedures are outlined in Appendix C, Criterion B of the 2016 MS4 Permit.

Comprehensive Environmental Inc. (CEI) is working with the Town of Hadley, Massachusetts to complete work under the 2016 MS4 Permit, including preparation of a Notice of Intent (NOI) for submittal to EPA. During preparation of the NOI and using the IPaC system, CEI identified one or more species (listed below) identified under Criterion B, which requires contacting USFWS for a formal or informal consultation. Therefore, the purpose of this letter is to request an informal consultation from USFWS for endangered species listed in Hadley for which we have made a "not likely to adversely affect" determination.

Activities covered under the 2016 MS4 Permit include stormwater discharge and related activities such as inspections, maintenance, and repairs of stormwater infrastructure. There are several reasons why activities proposed will not affect endangered or threatened species:



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- Energy & Sustainability
- Hazardous Waste
- Permitting & NEPA
- Stormwater & LID
- Transportation
- Water & Wastewater
- Watershed Restoration

1. No new construction is proposed under this permit, and any new construction may be required to undergo its own specific permitting process.
2. Any repair work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. Due to the nature of stormwater systems, this work falls primarily along roads within urbanized areas, where the risk of encountering and adversely impacting endangered species is limited.
3. Repair work that falls within the wetlands or 100-foot buffer zone is regulated by the Massachusetts Wetlands Protection Act, which triggers a project specific endangered species review, providing more specific protection for those species within the wetlands or buffer zone.
4. All stormwater discharges are pre-existing and Hadley was previously permitted under the 2003 MS4 NOI.

The following provides a list of species that were identified using the IPaC system, CEI's determination of "no effect" or "not likely to adversely affect," and a brief rationale regarding the determination. CEI is only seeking concurrence from the USFWS for those species with the determination of "not likely to adversely affect."

Terrestrial Animals

Northern Long-Eared Bat, "no effect" – In warmer months these bats roost and forage in forested areas. As no trees are being removed under this permit, and stormwater discharges are unlikely to affect the forested areas that serve as its habitat, CEI has determined that activities covered by this permit will have "no effect" on the Northern Long-Eared Bat.

Red Knot, "no effect" – This species of shorebird is not present within the town, although stormwater discharges from the town flow down rivers which pass through areas in which they are listed. The primary threat to this species is the overharvesting of horseshoe crab eggs in the Delaware Bay, which border Delaware and New Jersey. Due to their terrestrial nature, stormwater discharges are unlikely to affect them. Because of this, CEI has determined that activities covered by this permit will have "no effect" on the Red Knot.

Roseate Tern, "no effect" – This species of shorebird is not present within the town, although stormwater discharges from the town flow down rivers which pass through areas in which they are listed. The primary threat to them is human disturbance and habitat destruction. Due to their terrestrial nature, stormwater discharges are unlikely to affect them. Because of this, CEI has determined that activities covered by this permit will have "no effect" on the Roseate Tern.



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- Permitting & NEPA
- Stormwater & LID
- Transportation
- Water & Wastewater
- Watershed Restoration

Puritan Tiger Beetle, “not likely to adversely affect” – These beetles inhabit the sandy beaches and silt banks along large rivers, including the Connecticut River, which passes through Hadley. The larva burrow into the sand and can survive temporary flooding. Primary threats to the beetles include permanent flooding due to river damming, recreation, and man-made bank stabilization, such as retaining walls. The habitat of these beetles is protected by the Massachusetts Wetlands Protection Act. As such, any direct action which may impact them will be subject to further regulatory review. The pre-existing stormwater discharges will not cause permanent flooding and are thus unlikely to impact the beetle’s habitat. Because of this, CEI has determined that activities covered by this permit are “not likely to adversely affect” the Puritan Tiger Beetle.

Plants

Small Whorled Pogonia, “no effect” – Found on forested slopes with laterally draining water and along the slopes of vernal streams. The primary threats to this species are intentional destruction by humans, such as illegal collection, and habitat alteration. As even intermittent streams and their buffer zones are protected by the Massachusetts Wetlands Protection Act, any direct action which may impact this habitat will be subject to further regulatory review. While the species may also occur in upland areas, they are highly sensitive to changes in drainage. As stormwater systems primarily fall within roads and urbanized areas, repair work covered by this permit is unlikely to affect habitat that has not been previously impacted due to highly altered drainage from impervious areas. For these reasons, CEI has determined that activities covered by this permit will have “no effect” on the species.

CEI has determined that the stormwater discharges and discharge related activities regulated by this permit will have “no effect” on, or are “not likely to adversely affect” the above listed species within the action areas. We request a written concurrence from you regarding the species we have listed with the “not likely to adversely affect” determination. The Town of Hadley agrees to re-initiate consultation with USFWS if structural Best Management Practices (BMPs) not identified on the NOI are proposed for installation or construction during the course of the permit term.



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- Permitting & NEPA
- Stormwater & LID
- Transportation
- Water & Wastewater
- Watershed Restoration

Please review the above list and inform us of your conclusions at your earliest convenience. If you have any questions or would like to discuss, please contact me at 800.725.2550 x381 or tpetersen@ceiengineers.com.

Sincerely,

COMPREHENSIVE ENVIRONMENTAL

Travis Petersen
Project Scientist

Attachments/Enclosures:
Official Species List – US Fish & Wildlife Service



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-2528

Event Code: 05E1NE00-2018-E-05923

Project Name: Hadley 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-2528

Event Code: 05E1NE00-2018-E-05923

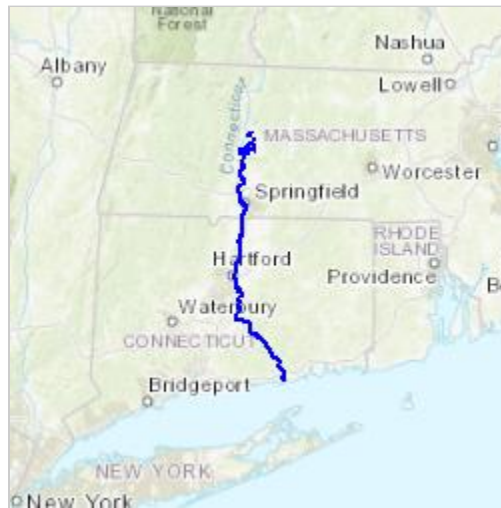
Project Name: Hadley MS4 Endangered Species Review

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/42.355024553667405N72.56427224087793W>



Counties: Hartford, CT | Middlesex, CT | New London, CT | Franklin, MA | Hampden, MA | Hampshire, MA

Endangered Species Act Species

There is a total of 5 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 Fisheries¹, 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 <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern <i>Sterna dougallii dougallii</i> 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

Insects

NAME	STATUS
Puritan Tiger Beetle <i>Cicindela puritana</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6073	Threatened

Flowering Plants

NAME	STATUS
Small Whorled Pogonia <i>Isotria medeoloides</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890	Threatened

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

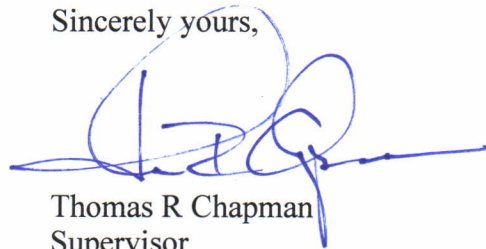
species listed under **Criterion C**,¹ you may still use this letter to certify under **Criterion B**. All existing guidance regarding requirements for certifying eligibility according to the USFWS Criterion A, B, or C for coverage by the 2016 MS4 Permit (see MA MS4 General Permit Appendix C – Endangered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

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

VIA EMAIL

February 14, 2019

David Nixon
Town Administrator

And;

Marlo Warner
Director
100 Middle Street
Hadley, MA. 01035
marlo@hadley.org

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041008, Town of Hadley

Dear Marlo Warner:

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.

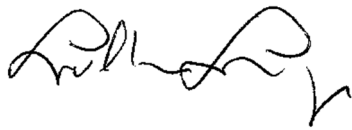
Information about the permit and available resources can be found on our website:
<https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>. Should you have
any questions regarding this permit please contact Newton Tedder at tedder.newton@epa.gov or
(617) 918-1038.

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

Appendix B

Regulatory Review and Legal Authority

Adopted 11-7-2019 STM by Art. 15, amending Hadley General Bylaws: Section 195 by adding Article III:

Stormwater Management and Erosion and Sediment Control

§ 195-17	Purpose.....	1
§ 195-18	Definitions	1
§ 195-19	Applicability	4
§ 195-20	Administration.....	6
§ 195-21	Enforcement and Penalties	6
§ 195-22	Severability	7

Article III Stormwater Management and Erosion and Sediment Control

§ 195-17 Purpose

- A. The purpose of this bylaw is to better manage land development in order to protect, maintain, and enhance the public health, safety, and general welfare of the citizens of Hadley by establishing minimum requirements and procedures to control the adverse impacts associated with stormwater runoff from new development and redevelopment.
- B. The proper management of stormwater runoff will meet the following objectives:
1. Establish requirements for land development activities that preserve the health of water resources by reducing the adverse water quality impacts of stormwater discharges to rivers, lakes, wetlands, reservoirs and streams in order to attain federal water quality standards.
 2. Prevent the discharge of pollutants, including hazardous chemicals, into stormwater runoff.
 3. Minimize the volume and rate of stormwater which is discharged to rivers, streams, reservoirs, lakes and the municipal storm drain system that flows from any site during and following development.
 4. Prevent erosion and sedimentation from land development and reduce stream channel erosion caused by increased runoff.
 5. Provide for the recharge of groundwater aquifers and maintain the base flow of streams.
 6. Provide stormwater facilities that are attractive, maintain the natural integrity of the environment, and are designed to protect public safety.
 7. Require that development and redevelopment projects limit stormwater runoff volume and treat for water quality in order to reduce flooding, stream erosion, pollution, property damage, and harm to aquatic life.
 8. Promote the use of LID practices such as reducing impervious cover, treating and infiltrating stormwater at the source, utilizing environmentally sensitive design, and the preservation of open space and natural areas, to the maximum extent practicable.
 9. Ensure that these management controls are properly maintained to function as designed.
 10. Establish procedures for the Town's review of stormwater management plans, and for the Town's inspection of approved stormwater controls.
 11. Comply with state and federal statutes and regulations relating to stormwater discharges.

§ 195-18 Definitions

The following definitions describe the meaning of the terms used in this bylaw:

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

AGRICULTURAL ACTIVITY - producing or raising one or more of the following agricultural commodities for commercial purposes:

1. animals, including but not limited to livestock, poultry, and bees;
2. fruits, vegetables, berries, nuts, maple sap, and other foods for human consumption; and
3. feed, seed, forage, tobacco, flowers, sod, nursery or greenhouse products, and ornamental plants or shrubs.

and as further defined by the Massachusetts Wetlands Protection Act and its implementing regulations.

ALTER: Any activity, which will measurably change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Alter may be similarly represented as “alteration of drainage characteristics,” and “conducting land disturbance activities.”

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

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

EROSION AND SEDIMENT 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 construction and construction-related land disturbance activities.

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

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

GROUNDWATER: All water beneath any land surface including water in the soil and bedrock beneath water bodies, but not including water in manmade structures.

IMPERVIOUS SURFACE: Any material or structure on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, without limitation: paved parking lots, rooftops, driveways, patios, and paved roads.

LOW IMPACT DEVELOPMENT: A development strategy that seeks to mimic (or in the case of redevelopment, restore/recreate) a site’s predevelopment hydrology through protection of on-site natural features and environmentally sensitive site design that limits impervious areas, preserves open space, and uses decentralized small scale facilities to capture and manage rainfall (or snowmelt) close to where it falls. These small scale facilities serve to slow, absorb, and treat flow and include bioretention areas, grass swales, porous pavements, cisterns, and green roofs and walls.

MAXIMUM EXTENT PRACTICABLE: Refers to the extent of efforts to comply with local post-construction stormwater management requirements. Elements of MEP indicate serious intent to comply and include selecting and implementing design elements to address site restrictions. MEP is defined as the following:

1. Proponents of development/redevelopment projects have made all reasonable efforts to meet the applicable Massachusetts Stormwater Management Standards;
2. They have made a complete evaluation of possible stormwater management measures, including environmentally sensitive site design that minimizes land disturbance and impervious surfaces, low impact development strategies and stormwater BMPs; and,
3. If not in full compliance with the applicable Standards, they are implementing the highest practicable level of stormwater management.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) or MUNICIPAL STORM DRAIN SYSTEM: The system of conveyances designed or used for collecting or conveying stormwater,

including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town of Hadley.

NEW DEVELOPMENT: Any construction activities or land alteration resulting in total earth disturbances equal to or greater than 40,000 square feet of area (or activities that are part of a larger common plan of development disturbing greater than 40,000 square feet of area) on an area that has not previously been developed to include impervious cover.

NONPOINT SOURCE POLLUTION: Pollution from many diffuse sources caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into water resource areas.

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

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

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

POLLUTANT: Any element of property or sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the commonwealth. Pollutants shall include:

1. Paints, varnishes and solvents;
2. Oil and other automotive fluids;
3. Nonhazardous liquid and solid wastes and yard wastes;
4. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, Bylaws, accumulations and floatables;
5. Pesticides, herbicides and fertilizers;
6. Hazardous materials and wastes; sewage, fecal coliform and pathogens;
7. Dissolved and particulate metals;
8. Animal wastes and residues;
9. Rock, sand, salt and soils;
10. Construction wastes and residues;
11. Noxious or offense matter of any kind.

RECHARGE: The replenishment of underground water reserves.

REDEVELOPMENT: Any construction, land alteration, or improvement of impervious surfaces resulting in total earth disturbances equal to or greater than 40,000 square feet of area (or activities that are part of a larger common plan of development disturbing greater than 40,000 square feet of area) that does not meet the definition of new development (see 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 for redevelopment activities.

RESOURCE AREA: Any area protected under including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Hadley Wetland Bylaw. Specifically, these areas are banks, bordering vegetated wetlands, ephemeral pools, land under waterbodies and waterways, land subject to flooding and riverfront areas.

RETENTION: The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

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

SITE: The area extent of construction activities, including but not limited to the creation of new impervious cover and improvement of existing impervious cover (excluding redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways as described under “Redevelopment” definition above).

STORMWATER: Any stormwater runoff, snowmelt runoff, and surface water runoff and drainage.

STORMWATER AUTHORITY: The Stormwater Authority administers, implements, and enforces this Bylaw. **See Section 4** below for more information on which entity serves as Stormwater Authority.

STORMWATER MANAGEMENT: The use of structural or non-structural practices that are designed to reduce stormwater runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

STORMWATER MANAGEMENT PERMIT: A permit issued by the Stormwater Authority, after review of an application, plans, calculations, and other supporting documents, which is designed to protect the Town from the adverse affects of uncontrolled and untreated stormwater runoff.

STORMWATER MANAGEMENT PLAN: A Plan to be submitted with the application for a Stormwater Management Permit, which shall include current and proposed site conditions, proposed improvements, proposed stormwater control measures, development schedules, and such other matters as may be required by the Stormwater Authority.

TSS: Total suspended solids. Matter suspended in water or stormwater when water is filtered for laboratory analysis, TSS are retained by the filter and dissolved solids pass through.

SWALE: A natural depression or wide shallow ditch used to temporarily store, route, or filter runoff.

WETLANDS: See “Resource Area” above.

§ 195-19 Applicability

- A. **Applicability.** The bylaw shall apply throughout the entire Town of Hadley. Prior to the issuance of any site plan approval, special permit, subdivision approval or development permit for any proposed development listed below, a stormwater management permit, or a waiver of the requirement for a stormwater management permit, must be approved by the Stormwater Authority. No person shall, on or after the effective date of the bylaw, initiate any land clearing, land grading, earthmoving or

development activities without first complying with this bylaw. The following uses and activities shall be required to submit stormwater management plans, including drainage reports, construction drawings, specifications and as-built information in conformance with the requirements of this bylaw and associated regulations:

1. Multifamily residential developments involving four or more units.
2. Any new business, commercial, industrial, and institutional structures on the same property and/or under common ownership with at least 5,000 square feet of gross floor area or at least 10,000 square feet of impervious surface.
3. Redevelopment or additions to existing commercial, industrial, and institutional uses which result in an additional impervious surface area or gross floor area of greater than 5,000 square feet or greater than 10,000 square feet of impervious surface.
4. Subdivisions and construction activities of any kind disturbing greater than or equal to an 40,000 square feet of area.
5. Development or redevelopment involving multiple separate activities in discontinuous locations or on different schedules if the activities are part of a larger common plan of development that all together disturbs 40,000 square feet of area or more.

The requirement for an erosion and sediment control plan may not be applicable to all projects and will be determined in consultation with the Stormwater Authority based on project size and potential impacts.

B. Exemptions. To prevent the adverse impacts of stormwater runoff, the stormwater performance standards in the accompanying regulations must be met at new and redevelopment sites. These standards apply to construction activities as described in the accompanying regulations. The following activities are exempt from the requirements for submittal and approval of a stormwater management plan:

1. Any agricultural activity which is consistent with an approved soil conservation plan prepared or approved by the Natural Resources Conservation Service;
2. Any logging which is consistent with a timber management plan approved under the Forest Cutting Practices Act by the Massachusetts Department of Conservation and Recreation;
3. Additions or modifications to existing single-family structures that do not disturb more than an 40,000 square feet of area of land;
4. Developments that do not disturb more than an 40,000 square feet of area of land, provided that they are not part of a larger common development plan, except for those mentioned above;
5. Repairs to any stormwater treatment system deemed necessary by the Hadley Stormwater Authority;
6. Any emergency activity that is immediately necessary for the protection of life, property or the environment, as determined by the Stormwater Authority;
7. Single-family residential uses disturbing less than an 40,000 square feet of area, unless part of a larger common plan of development that will disturb more than 40,000 square feet of area of land;
8. Utility construction and fencing, other than drainage, which will not alter drainage patterns;
9. 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) combined. Roadway widening and/or activities involving associated improvements that increase the amount of impervious area on the redevelopment site by greater than or equal to a single lane width are subject to the requirements of this bylaw.

10. Maintenance of lawns, gardens and landscaping, less than 40,000 square feet of area, associated with a single-family dwelling; and
11. As authorized in the Phase II Small MS4 General Permit for Massachusetts, stormwater discharges resulting from the activities identified in Section 3A that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Stormwater Standards as reflected in an order of conditions issued by the Conservation Commission are exempt from compliance with this bylaw.

§ 195-20 Administration

- A. The Planning Board will serve as the Stormwater Authority, administering, implementing, and enforcing this Bylaw. The Planning Board may at any time appoint an agent to act on its behalf.
- B. The Planning Board will review all applications for a stormwater permit under this Bylaw. Other Town boards will review applications within their respective expertise and make recommendations to the Planning Board.
- C. The Stormwater Authority may adopt and periodically amend rules and regulations relating to the procedures and administration of this Stormwater Management Bylaw, by majority vote of the Planning Board, after conducting a public hearing to receive comments on any proposed revisions. Such hearing date shall be advertised in a newspaper of general local circulation at least seven days prior to the hearing date.
- D. The Stormwater Authority may waive strict compliance with this Bylaw if such action is allowed by Federal, State, and local statutes, bylaws, and/or regulations; is in the public interest; and is consistent with the purposes of this Bylaw.
- E. The Stormwater Authority's action, rendered in writing, may consist of any of the following as a result of an application for a Stormwater Management Permit: Approval; Approval subject to conditions; Disapproval.
- F. This Bylaw is intended to integrate with other parts of the Town's land use regulations and not replace requirements, particularly of the Town of Hadley's Wetlands Protection Bylaw, or any other bylaw that may be adopted by the Town of Hadley. Any activity subject to the provisions of the above-cited bylaws must comply with the specifications of each.

§ 195-21 Enforcement and Penalties

- A. Violations. Any development activity that has commenced or is conducted contrary to this bylaw may be restrained by injunction or otherwise abated in a manner provided by law.
- B. Notice of violation. When the Building Inspector determines that an activity is not being carried out in accordance with the requirements of this bylaw, he shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:
 1. The name and address of the owner applicant.
 2. The address when available or the description of the building, structure, or land upon which the violation is occurring.
 3. A statement specifying the nature of the violation.

4. A description of the remedial measures necessary to bring the development activity into compliance with this bylaw and a time schedule for the completion of such remedial action.
 5. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.
 6. A statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within 30 days of service of notice of violation pursuant to MGL c. 40A, § 15.
- C. Stop-work orders. Persons receiving a notice of violations will be required to halt all construction activities. This stop-work order will be in effect until the Building Inspector confirms that the development activity is in compliance and the violation has been satisfactorily addressed; the Building Inspector may utilize the services of a Massachusetts registered engineer to verify compliance. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this bylaw.
- D. Criminal and civil penalties. Any person who violates any provision of this bylaw, valid regulation, or the terms or conditions in any permit or order prescribed or issued thereunder shall be subject to a fine not to exceed \$300 for each day such violation occurs or continues or subject to a civil penalty, which may be assessed in an action brought on behalf of the Town in any court of competent jurisdiction.
- E. Noncriminal disposition. As an alternative to criminal prosecution or civil action, the Town of Hadley may elect to utilize the noncriminal disposition procedure set forth in the §1-5(G) of the General Bylaw. The Building Inspector shall be the enforcing entity. The penalty for the first violation shall be \$100. The penalty for the second violation shall be \$200. The penalty for the third and subsequent violations shall be \$300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.
- F. Restoration of lands. Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the Stormwater Authority may take necessary corrective action, the cost of which shall become a lien upon the property until paid.
- G. Holds on certificate of occupancy. Certificates of occupancy will not be granted until corrections to all stormwater practices have been made and accepted by the Stormwater Authority.

§ 195-22 Severability

The invalidity of any section or provision of this bylaw shall not invalidate any other section or provision thereof.

Adopted as a Regulation of the Hadley Planning Board at a public hearing held 7/6/2021 to implement Hadley General Bylaws Section 195, Article III:

**Stormwater Management &
Erosion and Sediment Control
Regulations - Town of Hadley
Prepared by PVPC 5-18-21**

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Section 1 Purpose

- A. The purpose of this regulation is to better manage land development in order to protect, maintain, and enhance the public health, safety, and general welfare of the citizens of Hadley by establishing minimum requirements and procedures to control the adverse impacts associated with stormwater runoff from new development and redevelopment.
- B. The proper management of stormwater runoff will meet the following objectives:
 - 1. Establish requirements for land development activities that preserve the health of water resources by reducing the adverse water quality impacts of stormwater discharges to rivers, lakes, wetlands, reservoirs and streams in order to attain federal water quality standards.
 - 2. Prevent the discharge of pollutants, including hazardous chemicals, into stormwater runoff.
 - 3. Minimize the volume and rate of stormwater which is discharged to rivers, streams, reservoirs, lakes and the municipal storm drain system that flows from any site during and following development.
 - 4. Prevent erosion and sedimentation from land development and reduce stream channel erosion caused by increased runoff.
 - 5. Provide for the recharge of groundwater aquifers and maintain the base flow of streams.
 - 6. Provide stormwater facilities that are attractive, maintain the natural integrity of the environment, and are designed to protect public safety.
 - 7. Require that development and redevelopment projects limit stormwater runoff volume and treat for water quality, and reduce flooding, stream erosion, pollution, property damage, and harm to aquatic life.
 - 8. Advance the use of LID practices such as reducing impervious cover, treating and infiltrating stormwater at the source, utilizing environmentally sensitive design, and the preservation of open space and natural areas.
 - 9. Ensure that these management controls are properly maintained to function as designed.
 - 10. Establish procedures for the Town's review of stormwater management plans, and for the Town's inspection of approved stormwater controls.
 - 11. Comply with state and federal statutes and regulations relating to stormwater discharges.

Section 2 Definitions

The following definitions describe the meaning of the terms used in this regulation:

ABUTTER – The owner(s) of record of abutting lots and those within 300 feet of the property line of the lot where the project is proposed to be located.

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

AGRICULTURAL ACTIVITY - producing or raising one or more of the following agricultural commodities for commercial purposes:

1. animals, including but not limited to livestock, poultry, and bees;
2. fruits, vegetables, berries, nuts, maple sap, and other foods for human consumption; and
3. feed, seed, forage, tobacco, flowers, sod, nursery or greenhouse products, and ornamental plants or shrubs.

and as further defined by the Massachusetts Wetlands Protection Act and its implementing regulations.

ALTER: Any activity, which will measurably change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Alter may be similarly represented as “alteration of drainage characteristics,” and “conducting land disturbance activities.”

APPLICANT: A property owner or agent of a property owner who has filed an application for a Stormwater Management Permit.

AS-BUILT DRAWINGS: Drawings that record and document aspects and features of a project following construction, using the plans derived from a Stormwater Management Permit. These shall include all final grades, inverts, pipe sizes, etc. and clearly depict any approved changes to project design from the approved plans. As-built drawings are to be signed, dated and sealed by a Professional Engineer or Licensed Surveyor and certified by the Designer.

BEST MANAGEMENT PRACTICES: Structural, non-structural and managerial techniques that are recognized to be the most effective and practical means to prevent and/or reduce increases in stormwater volumes and flows, reduce point source and nonpoint source pollution, and promote stormwater quality and protection of the environment. “Structural” BMPs are devices that are engineered and constructed to provide temporary storage and treatment of stormwater runoff. “Nonstructural” BMPs use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source.

BETTER SITE DESIGN: Site design approaches and techniques that can reduce a site’s impact on the watershed through the use of nonstructural stormwater management practices. Better site design includes conserving and protecting natural areas and green space, reducing impervious cover, and using natural features for stormwater management.

CONSTRUCTION ACTIVITY: Disturbance of the ground by removal of vegetative surface cover or topsoil, grading, excavation, clearing or filling.

CONVEYANCE: Any structure or device, including pipes, drains, culverts, curb breaks, paved swales or man-made swales of all types designed or utilized to move or direct stormwater runoff or existing water flow.

DESIGN STORM: A rainfall event of specified size and return frequency that is used to calculate the runoff volume and peak discharge rate to a BMP.

DESIGNER: The individual responsible for the analysis, design, and inspection of the stormwater management system required by these Regulations. The Designer shall be a Massachusetts Registered Professional Engineer with experience and qualifications in the area of stormwater management, design, inspection and operations. The Designer may be a sole practitioner or a member of a firm.

DETENTION: The temporary storage of storm runoff in a BMP which is used to control the peak discharge rates and which provides gravity settling of pollutants.

DEVELOPMENT: See NEW DEVELOPMENT and REDEVELOPMENT

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

DRAINAGE AREA: That area contributing stormwater runoff to a single point measured in a horizontal plane, which is enclosed by a ridgeline or area of higher elevation.

EASEMENT: A grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes and which must be included in the conveyance of land affected by such easement.

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

EROSION AND SEDIMENT 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 construction and construction-related land disturbance activities.

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

FOREST CUTTING PLAN: A plan for the cutting of trees on forest land, which is prepared and submitted in accordance with M.G.L. Chapter 132 Sections 40 - 46A. The forest cutting plan requires approval by a Service Forester of the Massachusetts Department of Conservation and Recreation, as provided under 304 CMR 11.04.

FLOW ATTENUATION: Prolonging the flow time of runoff to reduce the peak discharge.

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

GROUNDWATER: All water beneath any land surface including water in the soil and bedrock beneath water bodies, but not including water in manmade structures.

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

HAZARDOUS MATERIAL: Any material which, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as "toxic" or "hazardous" under MGL c. 21C and c. 21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

IMPERVIOUS SURFACE: Materials or structures on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface may be defined to include, without limitation: paved parking lots, rooftops, driveways, patios, and paved roads.

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

LAND USES WITH HIGHER POTENTIAL POLLUTANT LOADS: Land uses identified in 310 CMR 22.20B(2), 310 CMR 22.20C(2)(a) - (k) and (m), 310 CMR 22.21(2)(a)(1) - (8), and 310 CMR 22.21(2)(b)(1) - (6); areas within a site that are the location of activities that are subject to an individual National Pollutant Discharge Elimination System (NPDES) Permit or the NPDES Multi-Sector General Permit; auto fueling facilities (gas stations); exterior fleet storage areas; exterior vehicle service and equipment cleaning areas; marinas and boatyards; parking lots with high intensity use; confined disposal facilities, and disposal sites.

LOW IMPACT DEVELOPMENT: A development strategy that seeks to mimic (or in the case of redevelopment, restore/recreate) a site's predevelopment hydrology through protection of on-site natural features and environmentally sensitive site design that limits impervious areas, preserves

open space, and uses decentralized small scale facilities to capture and manage rainfall (or snowmelt) close to where it falls. These small-scale facilities serve to slow, absorb, and treat flow and include bioretention areas, grass swales, porous pavements, cisterns, and green roofs and walls.

MASSACHUSETTS STORMWATER HANDBOOK AND STORMWATER STANDARDS:

The guidance issued by MassDEP, and as amended, that coordinates 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 Handbook addresses stormwater impacts through implementation of performance standards to promote increased stormwater recharge, the treatment of more runoff from polluting land uses, low impact development (LID) techniques, pollution prevention, the removal of illicit discharges to stormwater management systems, and improved operation and maintenance of stormwater best management practices (BMPs). MassDEP applies the Stormwater Management Standards pursuant to its authority under the Wetlands Protection Act, M.G.L. c. 131, § 40, and the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53. The revised Stormwater Management Standards have been incorporated in the Wetlands Protection Act Regulations, 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a).

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

NEW DEVELOPMENT: Any construction activities or land alteration resulting in total earth disturbances equal to or greater than 40,000 square feet (or activities that are part of a larger common plan of development disturbing equal to or greater than 40,000 square feet) on an area that has not previously been developed to include impervious cover.

NONPOINT SOURCE POLLUTION: Pollution from many diffuse sources caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into water resource areas.

OPERATION AND MAINTENANCE PLAN: A plan that defines 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.

OUTFALL: The terminus of a storm drain or other stormwater structure where the contents are released.

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

PEAK DISCHARGE: The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

PERMEABLE SOILS: are soil materials with a sufficiently rapid infiltration rate so as to greatly reduce or eliminate surface and stormwater runoff. These soils are generally classified as NRCS hydrologic soil types A and B.

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

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

POLLUTANT: Any element of property or sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the commonwealth. Pollutants shall include:

1. Paints, varnishes and solvents;
2. Oil and other automotive fluids;
3. Nonhazardous liquid and solid wastes and yard wastes;
4. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, accumulations and floatables;
5. Pesticides, herbicides and fertilizers;
6. Hazardous materials and wastes; sewage, fecal coliform and pathogens;
7. Dissolved and particulate metals;
8. Animal wastes and residues;
9. Rock, sand, salt and soils;
10. Construction wastes and residues;
11. Noxious or offense matter of any kind.

POST-DEVELOPMENT: The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land. Post-

development refers to the phase of a new development or redevelopment project after completion, and does not refer to the construction phase of a project.

POST-DEVELOPMENT IMPERVIOUS SURFACE: The final impervious cover on the portion of the property where construction activities have occurred.

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

RECHARGE: The replenishment of underground water reserves.

RECORDED: Recorded in the Hampshire County Registry of Deeds

REDEVELOPMENT: Any construction activities, land alteration, or improvement of impervious surfaces resulting in total earth disturbances equal to or greater than 40,000 square feet (or activities that are part of a larger common plan of development disturbing equal to or greater than 40,000 square feet) that does not meet the definition of new development (see above). Roadway widening or improvements disturbing equal to or greater than 40,000 square feet shall meet the requirements for redevelopment activities.

REGISTRY OF DEEDS: Hampshire County Registry of Deeds, the registry in which the land in question is situated, and, when appropriate, shall include the land court.

RESOURCE AREA: Any area protected under including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Hadley Wetland Bylaw. Specifically, these areas include: banks, bordering vegetated wetlands, vernal pools, land under waterbodies and waterways, land subject to flooding and riverfront areas.

RETENTION: The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

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

SITE: The area extent of construction activities, including but not limited to the creation of new impervious cover and improvement of existing impervious cover (excluding redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways as described under “Redevelopment” definition above).

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

START OF CONSTRUCTION: The first land disturbing activity associated with a development, including land preparation such as clearing, grading and filling; installation of streets and walkways; excavation for basements; footings, piers or foundations; erection of temporary forms; and installation of accessory buildings such as garages.

STORMWATER: Any stormwater runoff, snowmelt runoff, and surface water runoff and drainage.

STORMWATER AUTHORITY: The Stormwater Authority administers, implements, and enforces the Hadley Stormwater Management and Erosion and Sediment Control Bylaw, Part I of the General Bylaws, Chapter 195, Article 3, and these Regulations. See Section 3 below for more information on Authority and Administration.

STORMWATER MANAGEMENT: The use of structural or non-structural practices that are designed to reduce stormwater runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

STORMWATER MANAGEMENT PERMIT: A permit issued by the Stormwater Authority, after review of an application, plans (stormwater management and in most cases erosion and sediment control), calculations, and other supporting documents, which is designed to protect the Town from the adverse affects of uncontrolled and untreated stormwater runoff.

STORMWATER MANAGEMENT PLAN: A Plan to be submitted with the application for a Stormwater Management Permit, which shall include current and proposed site conditions, proposed improvements, proposed stormwater control measures, development schedules, and such other matters as may be required by the Stormwater Authority.

STOP WORK ORDER: An order issued which requires that all construction activity on a site be stopped.

TSS: Total suspended solids are particles suspended in water or stormwater. Both organic and inorganic particles can contribute to suspended solids concentration. In the field, high concentrations of TSS can make water appear cloudy. In a laboratory, TSS can be measured

when water is filtered. TSS are retained by the filter and dissolved solids pass through.

SWALE: A natural depression or wide shallow ditch used to temporarily store, route, or filter runoff.

WETLANDS: See “Resource Area” above.

Section 3 Authority and Administration

A. Authority

These Regulations have been adopted by the Stormwater Authority in accordance with the Hadley Stormwater Management and Erosion and Sediment Control Bylaw, Part I of the General Bylaws, Chapter 195, Article 3.

The Stormwater Authority may adopt and periodically amend these Regulations pursuant to Section 195-20 of the Stormwater Management and Erosion and Sediment Control Bylaw and other relevant provisions of the General Bylaws of the Town.

These Regulations are intended to integrate with other parts of the Town’s land use regulations and not replace requirements, particularly of the Town of Hadley’s Wetlands Protection Bylaw, or any other bylaw that may be adopted by the Town of Hadley. Any activity subject to the provisions of the above-cited bylaws must comply with the specifications of each.

B. Administration

The Planning Board will serve as the Stormwater Authority, administering, implementing, and enforcing these Regulations. The Planning Board may at any time appoint an agent to act on its behalf.

The Stormwater Authority will review all applications for a Stormwater Management Permit under these Regulations. Other Town boards, as noted below in Section 5 will review applications within their respective expertise and make recommendations to the Planning Board.

The Stormwater Authority may waive strict compliance with these Regulations if such action is allowed by Federal, State, and local statutes, bylaws, and/or regulations; is in the public interest; and is consistent with the purposes of these Regulations.

The Stormwater Authority's action, rendered in writing, may consist of any of the following as a result of an application for a Stormwater Management Permit: Approval; Approval subject to conditions; Disapproval.

C. Coordination with Other Required Permits

Projects undergoing permitting under site plan review under the Zoning Bylaw or under the Subdivision Regulations that also require a stormwater management permit, shall submit drainage reports, stormwater management plan, and erosion and sediment control plan, construction drawings, specifications, operation and maintenance plan, and as-built information in accordance with these Regulations.

For projects subject to these Regulations per Section 4, where stormwater discharges are wholly subject to jurisdiction under the Wetlands Protection Act, an Order of Conditions issued by the Conservation Commission that demonstrates a project's compliance with the Massachusetts Stormwater Management Standards and these Regulations will serve as the Stormwater Management Permit.

Stormwater discharges resulting from the activities identified in Section 4 below that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Stormwater Standards as reflected in an order of conditions issued by the Conservation Commission are exempt from compliance with these Regulations.

Section 4 Applicability

A. Applicability. These Regulations shall apply throughout the entire Town of Hadley. Prior to the issuance of any site plan approval, special permit, subdivision approval or development permit for any proposed development listed below, a Stormwater Management Permit, or a waiver of the requirement for a Stormwater Management Permit, must be approved by the Stormwater Authority. No person shall, on or after the effective date of these Regulations, initiate any land clearing, grubbing, grading, earthmoving or development activities without first complying with these Regulations. The following uses and activities shall be required to submit drainage reports, plans, construction drawings, specifications and as-constructed information in conformance with the requirements of these Regulations:

1. Multifamily residential developments involving four or more units.
2. Any new business, commercial, industrial, and institutional structures on the same property and/or under common ownership with at least 5,000 square feet of gross floor area or at least 10,000 square feet of impervious surface.

3. Redevelopment or additions to existing commercial, industrial, and institutional uses which result in an additional impervious surface area or gross floor area of greater than 5,000 square feet or greater than 10,000 square feet of impervious surface.
4. Subdivisions and construction activities of any kind disturbing greater than or equal to a 40,000 square feet area.
5. Development or redevelopment involving multiple separate activities in discontinuous locations or on different schedules if the activities are part of a larger common plan of development that all together disturbs 40,000 square feet of area or more.
6. The Stormwater Authority may require a permit for a project of any size which has caused or can reasonably be expected to cause or contribute to a violation of State Water Quality Standards or as deemed necessary by the Stormwater Authority for a project which would otherwise not require a stormwater management permit.

While all projects disturbing greater than or equal to a 40,000 square foot area will be subject to an erosion and sediment control plan, the requirements for an erosion and sediment control plan may not be applicable to smaller projects and will be determined in consultation with the Stormwater Authority based on project size and potential impacts.

Notwithstanding any exemption provided for below, any alteration, redevelopment, or conversion of a land use to “land uses with higher potential pollutant loads” as defined above in Section 2 and in the most recent version of the Massachusetts Stormwater Handbook, and projects posing other potential water quality concerns shall require a Stormwater Management Permit.

- B. Exemptions. To prevent the adverse impacts of stormwater runoff, the stormwater performance standards in Section 7 must be met at new and redevelopment sites. These standards apply to construction activities as described under Section 4. The following activities are exempt from the requirements for submittal and approval of a stormwater management plan:
1. Any agricultural activity which is consistent with an approved soil conservation plan prepared or approved by the Natural Resources Conservation Service;
 2. Any logging which is consistent with a forest cutting plan approved under the Forest Cutting Practices Act by the Massachusetts Department of Conservation and Recreation;
 3. Additions or modifications to existing single-family structures that disturb less than 40,000 square feet of land;
 4. Developments that disturb less than 40,000 square feet of land, provided that they are not part of a larger common development plan, except for those mentioned above;
 5. Repairs to any stormwater treatment system deemed necessary by the Hadley Stormwater Authority;

6. Any emergency activity that is immediately necessary for the protection of life, property or the environment, as determined by the Stormwater Authority;
7. Single-family residential uses disturbing less than 40,000 square feet unless part of a larger common plan of development that will disturb more than 40,000 square feet of land;
8. Utility construction and fencing, other than drainage, which will not alter drainage patterns;
9. Municipal activities that are exclusively limited to maintenance and improvement of sidewalks or existing roadways (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects). Combined activities involving roadway widening and/or associated improvements that increase the amount of impervious area on the redevelopment site by greater than or equal to a single lane width are subject to the requirements of these Regulations;
10. Maintenance of lawns, gardens and landscaping, less than 40,000 square feet, associated with a single-family dwelling.

Section 5 Permit procedures and requirements

A. Permit Required. No landowner or land operator shall receive any of the building, grading, or other land development permits required for land disturbance activities, and no landowner shall commence land disturbance activities, without approval of a stormwater management permit from the Stormwater Authority and meeting the requirements of these Regulations.

B. Pre-application and Concept Plan Meeting. Applicants for a Stormwater Management Permit are encouraged to attend at least one pre-application meeting with the Stormwater Authority. This meeting is intended to provide the applicant with advice and guidance relative to the approval process; and allow the applicant and Stormwater Authority to have a preliminary conversation about the site, stormwater management considerations, and concept plan.

For this meeting, the Town has a Low Impact Development design checklist to encourage a better site design approach. This checklist identifies several items that will be helpful for this preliminary meeting and may help to streamline the permitting process overall.

This meeting can be combined with the pre-submission review meeting described under the Subdivision Regulations.

C. Filing Application. The site owner or his/her agent shall submit a stormwater management permit application or an application for waiver to the Hadley Stormwater Authority for review and approval for any proposed development specified in Section 4 of these Regulations and subsequently filed with the Town Clerk. Nine copies of the stormwater

management permit application shall be submitted and clearly labeled, along with other documents required in the Zoning Bylaw for site plan review as necessary. An electronic copy shall also be submitted in a form agreeable to the Stormwater Authority.

The plan shall contain:

1. A stormwater management plan, supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire development, as specified in Sections 7 and 10. The plan shall serve as the basis for all subsequent construction.
 2. An erosion and sediment control plan, which shall contain sufficient information to describe the nature and purpose of the proposed development, as specified in Sections 7 and 10. Note above in Section 4 which projects are required to include the erosion and sediment control plan.
 3. Massachusetts Department of Environmental Protection Checklist for Stormwater Report completed, stamped and signed by a Professional Engineer (PE) licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in the Massachusetts Stormwater Management Standards, EPA MS4 permit, Hadley Stormwater Management and Erosion and Sediment Control Bylaw and these Regulations. Where there may be misalignment given updates in process on some of the state standards, the stricter of the standards shall apply.
 4. A draft Operation and Maintenance Plan, with ongoing Inspection and Maintenance agreement, as specified in Section 8.
 5. A list of abutters, certified by the Assessors Office, within 300 feet of the property line of the site, including property owners in another municipality, if not already provided through site plan review material. This submission shall also include two sets of mailing labels addressed to all abutters.
- D. Application Fees. Application fees established by the Stormwater Authority are required to cover expenses for processing the Stormwater Management Permit application. Application fees are in addition to any other local or state fees that may be charged.

In addition, the Stormwater Authority or its agent is authorized to retain a Registered Professional Engineer or other professional consultant to advise on any aspects of the permit application. Applicants may be required to pay an "Engineering and Consultant Review Fee" before the review process.

The applicant may request, and the Hadley Stormwater Authority may grant, a waiver from any information or fee requirements it judges to be unnecessary to the review of a particular plan.

E. Procedures for review and approval of stormwater permit applications.

1. The procedures for review and approval of stormwater management permit applications shall be consistent with the Stormwater Authority regulations, as appropriate to the use.
2. The Stormwater Authority will review the permit application for administrative completeness. If the Stormwater Authority determines the application to be incomplete, the Stormwater Authority will inform the applicant that the application will be denied based on the determination that the application is administratively incomplete unless the incomplete items are addressed by a specific date to be determined by the Stormwater Authority. The Stormwater Authority will require that an extension of the review period be granted to allow additional time for the applicant to provide the required information and the Stormwater Authority and/or other reviewing boards to review the application once complete information has been submitted.
3. The Stormwater Authority shall refer copies of the stormwater management permit application to other appropriate Town departments and/or boards for review, and shall consider any comments and/or recommendations submitted by said departments and/or boards during the review period.
4. If required, the applicant shall also submit copies of the stormwater permit application to a consultant engineer on the Stormwater Authority's approved list of consultant engineers, for review.
5. The Stormwater Authority shall hold a public hearing within 65 days of the receipt of a complete application and shall take final action within 90 days from the close of the hearing unless such time is extended by agreement between the applicant and the Stormwater Authority. Whenever possible, public hearings for stormwater permits shall be combined with public hearings for site plan approval, subdivision review, special permits or other permits. Notice of the public hearing shall be given by publication in a local paper of general circulation, by posting and by first-class mailings to abutters at least seven days prior to the hearing, consistent with procedures for public hearings provided in MGL c. 40A, § 11.

F. Criteria for review of stormwater permit applications. In addition to site plan approval criteria used by the Stormwater Authority in making permit decisions for the uses specified in these Regulations, the Stormwater Authority must also find that the stormwater management plan and erosion and sediment control plan submitted with the permit application meet the following criteria:

1. Are consistent with the purposes of the Hadley Stormwater Management and Erosion and Sediment Control Bylaw, Part I of the General Bylaws, Chapter 195, Article 3, and these Regulations in Section 1.
2. Meet the performance standards described in Section 7.
3. Meet the content requirements in Section 10.

G. Stormwater Authority action. The Stormwater Authority's action, rendered in writing, shall consist of either:

1. Approval of the stormwater management permit application based upon determination that the proposed plan meets the purposes in Section 1 and the standards in Section 7 and will adequately protect the water resources of the community and is in compliance with the requirements set forth in these Regulations.
2. Approval of the stormwater management permit application subject to any conditions, modifications or restrictions required by the Board which will ensure that the project meets the purposes in Section 1 and the standards in Section 7 and adequately protects the water resources of the community and is in compliance with the requirements set forth in these Regulations.
3. Disapproval of the stormwater management permit application based upon a determination that the proposed plan, as submitted, does not meet the purposes in Section 1 and the standards in Section 7 or adequately protect water resources, as set forth in these Regulations. Failure of the Board to take final action upon an application within the time specified above shall be deemed to be approval of said application. Upon certification by the Town Clerk that the allowed time has passed without Board action, the Board must issue a stormwater management permit.

Final approval, if granted, shall be endorsed on the Stormwater Management Permit by the signature of the majority of the Stormwater Authority.

H. Inspections. No plan will be approved without adequate provision for inspection of the property before development activity commences. See Section 6 below.

I. Project start date. The project shall begin within three (3) years after issuance of the Stormwater Management Permit. If the project does not begin within three (3) years, and the Stormwater Authority finds that the approved Stormwater Management Plan is inconsistent with current site conditions, the applicant shall submit a modified Plan that requires approval prior to commencement of land-disturbing activities. The Stormwater Authority may grant an extension, at its discretion, to the three-year statute of limitations on a Stormwater Management Permit.

J. Plan Changes. No changes may be made to an approved Stormwater Management Permit without the prior approval of the Stormwater Authority. The applicant must notify the

Stormwater Authority in writing of any proposed change. If the Stormwater Authority deems the change to be significant, it may require that an amended Stormwater Management Permit application be filed, and that a new hearing be held, with prior notification to abutters.

Section 6 Site Supervision and Inspections

- A. Pre-development Meeting. Prior to starting any clearing, excavation, and construction, the applicant, the applicant's technical representative, the general contractor or any other person with authority to make changes to the project, may be required to meet with the Stormwater Authority or their designated representative to review the approved plans and their proposed implementation. The need for a pre-development meeting shall be determined by the Stormwater Authority based on the project scope.
- B. On-site Plan for Reference. The approved Erosion and Sedimentation Control Plan and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Stormwater Authority, shall be maintained at the site during the progress of the work.
- C. Inspections. No permit will be issued without adequate provision for inspection of the property before development activities commence. The inspections described here are to be done in coordination with the Department of Public Works. The Department of Public Works shall be notified at least 24 hours prior to inspection. The applicant shall be responsible for paying the costs of all inspections. The Department of Public Works will separately bill the applicant for its role in these inspections.

Written reports for all inspections shall include: the inspection date and location; evaluation of compliance with the stormwater permit; any variations from approved specifications or any violations of the Stormwater Management Plan. Reports shall be submitted to the Stormwater Authority and the Town of Hadley Building Inspector.

Reports will indicate that either work is approved or that there has been a failure to comply with the requirements of the approved plan. Applicants will be notified in writing in what respects there has been a failure to comply with the requirements of the approved plan. Any portion of the work that does not comply shall be promptly corrected by the applicant or the applicant will be subject to the bonding provisions of Section 11 or the penalty provisions of the Stormwater Management and Erosion and Sediment Control Bylaw, Part I of the General Bylaws, Chapter 195, Article 3,

At a minimum, inspections will include:

1. Inspection of site erosion and sediment controls just before the start of the construction process, and either:
 - a. at least once every seven (7) calendar days; or
 - b. once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater;
2. Pre-bury inspection: prior to backfilling of any underground drainage or stormwater conveyance structures.
3. Final inspection: when all work, including construction of stormwater management facilities and landscaping, has been completed. Final inspection shall include a full, dated video inspection of all stormwater pipes installed. If the system is found to be inadequate due to operational failure, even though built according to the Stormwater Management Plan, the system shall be corrected by the applicant. No certificate of occupancy shall be issued until all work has been approved. If the system does not comply with the Plan, the applicant shall be notified in writing of the violation and the required corrective actions. A Stop Work order shall be issued until any violations are corrected and all work previously completed has received approval by the Stormwater Authority.

If the Project Design Engineer finds the system to be properly installed and functioning, he/she shall provide certification to the Stormwater Authority. Certification to the Stormwater Authority shall consist of an engineering stamp on the final as-built drawings.

Erosion and sediment control inspections shall be conducted by a professional knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the appropriate skills and training to assess conditions at the construction site and responds quickly with recommendations for remedy as needed.

All other inspections shall be conducted by the Designer to verify proper installation and functioning of all installed stormwater features.

The Stormwater Authority reserves the right to conduct random inspections to ensure effective control of erosion and sedimentation during all phases of construction. These may, at the Stormwater Authority's discretion, be third party inspections at the applicant's expense.

If in the course of inspections by the Stormwater Authority, or its agent, it is determined that water resources or the MS4 is not being adequately protected, or that information submitted by the applicant in reporting to the Stormwater Authority is inadequate, has missing information, or is insufficient, enforcement action will proceed at a level which is

appropriate at the discretion of the Stormwater Authority given the level of the perceived offense.

- D. Right of entry for inspection. When any new drainage control facility is installed on private property, or when any new connection is made between private property and a public drainage control system or sanitary sewer, the filing of an application shall be deemed as the property owner's permission to the Stormwater Authority or its agent for the right to enter the property at reasonable times and in a reasonable manner for the purpose of the inspection. This includes the right to enter a property when it has a reasonable basis to believe that a violation of these Regulations is occurring or has occurred and to enter when necessary for abatement of a public nuisance or correction of a violation of these Regulations.

Section 7 Performance Standards

A. Resources and Guidance

1. The *Massachusetts Stormwater Handbook and Stormwater Standards*, as updated or amended, is hereby incorporated by reference as part of this Regulation, and shall furnish additional policy, criteria and information, including specifications and standards for the proper implementation of the requirements of these Regulations.

Volume 1 lays out the legal and regulatory framework for the *Massachusetts Stormwater Handbook*. The Massachusetts Stormwater Standards are contained in Chapter 1 of Volume 1.

Volume 2 addresses the elements of stormwater management, particularly Best Management Practices (BMPs). This volume includes lists of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice. The manual may be updated and expanded from time to time, based on improvements in engineering, science, monitoring and local maintenance experience, at the discretion of the Massachusetts Department of Environmental Protection. Stormwater treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards.

Volume 3 describes how to document compliance through preparation of a Stormwater Report.

2. Rainfall data

The recommendation for rainfall data to be used in calculations is currently being updated in the Massachusetts Stormwater Handbook. In the interim, applicants shall calculate stormwater peak runoff rates, using 90% of the upper confidence interval mean of NOAA Atlas 14 data for Hadley. MassDEP refers to this as “NOAA plus” and has

indicated that it incorporates risk observed in the current data to reflect range of larger storms.

Recommended procedure:

- Navigate to NOAA 14 website:
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html
- [Click Massachusetts map on the desired location](#)
- [Navigate to “point of interest,” and tabular results will pop up](#)
- [Multiply 0.9 by the NOAA upper confidence interval mean to obtain peak runoff rate for a given design storm](#)

3. Erosion and sediment control

See the Massachusetts *Erosion and Sediment Control Guidelines for Urban and Suburban Areas*, as updated or amended.

- B. Massachusetts Stormwater Handbook and Stormwater Standards. Projects must meet the standards of the Massachusetts Stormwater Management Standards as may be currently in effect for new development and redevelopment projects (or be more stringent than those standards).

When the proposed discharge may have an impact upon a sensitive receptor, including aquifers, streams, wetlands, and/or storm sewers, the Stormwater Authority may require an increase in these minimum requirements, based on existing stormwater system capacity.

- C. Environmentally Sensitive Site Planning and Design and Low Impact Development Strategies. All projects subject to these Regulations must use environmentally sensitive site planning and design and Low Impact Development (LID) strategies to reduce runoff from both new and redevelopment projects. If full compliance is not provided, an applicant must document why key steps in the process could not be met and what is proposed for mitigation.

Strategies should:

1. Identify, map, and preserve the site’s natural features and environmentally sensitive areas such as wetlands, aquifers, native vegetation, stands of trees, and trees with a trunk diameter at breast height of 8 inches or more as measured 4 feet above the ground, slopes, drainage ways, permeable soils, flood plains, woodlands, and soils, particularly prime farmlands soils;
2. Prevent adverse impacts of proposed activities on habitats mapped by the Massachusetts Natural Heritage and Endangered Species Program as endangered, threatened or of special concern, estimated habitats of rare wildlife and certified vernal pools, and priority habitats of rare species.

3. Minimize grading and clearing;
4. Delineate potential building envelopes, avoiding environmental resource areas and appropriate buffers by clustering buildings and reducing building footprints;
5. Develop methods to minimize impervious surfaces, and protect and preserve open space. Reduce impervious surfaces wherever possible through alternative street design, such as omission of curbs and use of narrower streets, shared driveways, and through use of shared parking areas where allowed by the Zoning Bylaw;
6. Ensure that new fill or soils brought to site do not change the infiltration characteristics of the site;
7. Ensure that all work is planned and executed so as to avoid compaction of topsoil and subsoils, including such best practices as reducing the number of trips required over area of disturbance, laying down soil protective mats for trafficked areas, and avoiding work after rain or snowmelt that soaks soils. For construction equipment, best practices should include using vehicles with low axle loads, reduced tire pressures, and use of flotation tires, doubles, radial tires, and/or large-diameter tires.
8. Mitigate potential temperature impacts of development on stormwater runoff and Cold-Water Fisheries. Elevated temperatures are caused by reduced shading in developed riparian areas, warming of stormwater as it runs over hot roofs and pavement, and heating of water stored in stormwater management ponds. Cold Water Fisheries located in the Town of Hadley include, but are not limited to: the Mill River, Fort River, and Russell Brook. MassGIS has current maps of these Cold-Water Fisheries and watershed areas. Projects located near such resources shall use BMPs that include buffers, infiltration or under-drained filter BMPs. If ponds are required, under-drained outlet structures can provide effective cooling. Equally important to maintaining cool stream temperature is preservation and/or restoration of riparian trees and shrubs to provide shade. To the maximum extent, trees and other existing vegetation shall be conserved. To the extent that existing vegetation cannot be conserved, new natural areas shall be established by planting additional vegetation, establishing no-mow zones, clustering tree areas, and using native plants in revegetation.
9. Promote erosion and sediment control by using measures that are appropriate to the conditions of the site. Prevention of erosion is preferred over sedimentation control.

During planning:

- a. Avoid sensitive areas, steep slopes, and highly erodible soils when developing site plans;
- b. Maximize groundwater recharge;
- c. Sequence activities to minimize simultaneous areas of disturbance;
- d. Identify potential problem areas before the site plan is finalized and approved;
- e. Divert uncontaminated water around disturbed areas.
- f. Plan to use sediment barriers along contour lines, with a focus on areas where short-circuiting (i.e., flow around the barrier) may occur;
- g. Use berms at the top of steep slopes to divert runoff away from the slope's edge;

- h. Design trapezoidal or parabolic vegetated drainage channels, not triangular;
- i. Use vegetated channels with rip rap check dams, instead of impervious pavement or concrete, to reduce the water velocity of the conveyance system;
- j. Design a check dam or sediment forebay with level spreader at the exit of outfalls to reduce water velocity of the discharge and collect sediment;
- k. Use turf reinforcement matting to stabilize vegetated channels, encourage vegetation establishment, and withstand flow velocities without scouring the base of the channel;
- l. Plan open channels to follow land contours so natural drainage is not disrupted;
- m. Use organic matting for temporary slope stabilization and synthetic matting for permanent stabilization;
- n. Provide a stable channel, flume, or slope drain where it is necessary to carry water down slopes;
- o. Protect and manage on- and off-site materials 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);
- p. Designate snow disposal areas outside of wetlands and buffer zones.

During construction:

- a. Minimize the amount of disturbed area and protect natural resources;
 - b. Institute interim and permanent stabilizations measures no more than 7 days after construction activity has temporarily or permanently ceased on that portion of the site;
 - c. Protect slopes on the construction site;
 - d. Protect all storm drain inlets and armor all newly constructed outlets;
 - e. Use perimeter controls at the site;
 - f. Stabilize construction site entrances and exits to prevent off-site tracking of sediment;
 - g. Clean and sweep up any debris accidentally tracked, dumped or spilled off site;
 - h. Inspect stormwater controls at regular intervals and especially following any storm.
- 9. Manage runoff using smaller, decentralized, low-tech stormwater management techniques to treat and recharge stormwater close to the source;
 - 10. Lengthen flow paths and maximize sheet flow;
 - 11. Use nonstructural, low-tech methods including open drainage systems, disconnection of roof runoff, and street sweeping where possible;
 - 12. Integrate the following techniques into the site design to create a hydrologically functional lot or development site, based on soil, groundwater level, and topographic conditions:
 - a. Reduction of impervious surface
 - b. On-site infiltration, flow attenuation, and pollutant removal of runoff on-site to existing areas with grass, trees, and similar vegetation and through the use of amended soils that will store, filter, and infiltrate runoff;

- c. Bioretention (rain gardens);
- d. Open vegetated swales and natural depressions;
- e. Use of permeable pavement;
- f. Use of roof gardens where practicable;
- g. Re-use of stormwater to replace water used for irrigation, toilet flushing, or industrial processes.

13. Follow the guidance for design and treatment of infiltration practices in Volume 2 of the *Massachusetts Stormwater Handbook*, as amended, or other federally or State approved design guidance; and

14. Use native plants;

D. Construction Materials. Manage all construction materials and wastes on site so as to avoid polluted flows. This includes: demolition materials, excess or discarded building or site material, including, but not limited to concrete truck washout, chemicals, litter, and sanitary waste. These wastes may not be discharged into the Town's storm drain system.

E. Additional Stormwater Management Design Criteria.

- 1. All stormwater management facilities shall be designed to provide an emergency overflow system and incorporate measures to provide a nonerosive velocity of flow along its length and at any outfall.
- 2. The designed release rate of any stormwater structure shall be modified if any increase in flooding or stream channel erosion would result at a downstream dam, highway, structure, or normal point of restricted stream flow.
- 3. Nitrogen Optimization. Stormwater BMPs must be optimized for nitrogen removal. Guidance is provided in Attachment 1 to Appendix H of the *2016 MS4 Massachusetts Small MS4 General Permit*. When proposed BMPs are not covered in EPA Region 1's tools, any other state or federally approved BMP performance estimates can be used to estimate pollutant removal of the proposed or installed BMP.

F. Additional Standards for New Development Projects.

Stormwater management systems for new development projects shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-development impervious surface area on the site AND 60% of the average annual load of Total Phosphorus (TP) related to the total post-development impervious surface area on the site.

Average annual pollutant removal requirements are achieved through one of the following methods:

1. Installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) 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, then 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; or
2. Retaining the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-development impervious surface area on the new development site; or
3. Meeting a combination of retention and treatment that achieves the above standards.

G. Additional Standards for Redevelopment Projects.

Stormwater management systems on redevelopment sites shall be designed to meet an average annual pollutant removal equivalent to 80% of the average annual post-development load of Total Suspended Solids (TSS) related to the total post- development impervious surface area on the site AND 50% of the average annual load of Total Phosphorus(TP) related to the total post- development impervious surface area on the site.

Average annual pollutant removal requirements are achieved through one of the following methods:

1. Installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) 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, then 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; or
2. Retaining the volume of runoff equivalent to, or greater than, 0.8 inch multiplied by the total post- development impervious surface area on the redeveloped site; or
3. Meeting a combination of retention and treatment that achieves the above standards

Section 8 Operations and Maintenance Plan

- A. Draft Operation and Maintenance Plan. All stormwater management systems must have an operation and maintenance plan and agreement to ensure that systems function as designed.

A draft Operation and Maintenance Plan (O&M Plan) and agreement is required at the time of application for all projects subject to these Regulations, and prior to issuance of any stormwater management permit. The O&M Plan shall be designed to ensure compliance with the Permit, these Regulations, and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. The Operation and Maintenance Plan shall be binding on all subsequent owners of land served by the private stormwater management facility.

Such agreement shall provide for access to the facility at reasonable times for regular inspections by the Town or its authorized representative and for regular or special assessments of property owners to ensure that the facility is maintained in proper working condition to meet design standards and any provision established. The O&M Plan shall remain on file with the Stormwater Authority and shall be an ongoing requirement. Contents of the O&M Plan are enumerated in Part C of this Section below.

- B. Final Operation and Maintenance Plan. The Applicant or Owner shall submit a final and executed O&M Plan that reflects all changes made to project design from the approved submission, if any.

The final Operation and Maintenance Plan shall be recorded by the applicant and/or owner in the land records of the Registry of Deeds along with any easements necessary to maintaining stormwater facilities. Proof of such recording shall be filed by the applicant and/or owner with the permit granting authority. The required contents of the Operation, Maintenance, and Inspection Agreement are specified in Part C of this Section below.

- C. Contents of the O&M Plan. The O&M Plan shall include the following:

1. The name(s) of the owner(s) for all components of the system.
2. Maintenance agreement that specifies:
 - a. The names and addresses of the person(s) responsible for operation and maintenance.
 - b. The person(s) responsible for financing both maintenance and emergency repairs.
 - c. A plan drawn to scale showing the location of all stormwater BMPs in each treatment train, including catch basins, manholes/access lids, main, and stormwater devices, along with discharge point;
 - d. Records of installation and maintenance;
 - e. A description and delineation of public safety features.
 - f. An estimated operations and management budget.

- g. An inspection and maintenance schedule for all drainage structures, including swales and ponds, and including routine and non-routine maintenance tasks to be performed, the time period for each.
- h. An operation and maintenance log form
- i. Agreement that the person(s) responsible for operation and maintenance will follow this schedule and maintain an operation and maintenance log to include inspections, repairs, replacement, and disposal (type of material and disposal location);
- j. Agreement that the person(s) responsible for operation and maintenance, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.
- k. Agreement that person(s) responsible for operation and maintenance, shall submit annual certification documenting the work that has been done over the last 12 months to properly operate and maintain the stormwater control measures.
- l. A map and list of stormwater management easements with purpose and location of each
- m. Information on how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance
- n. The signature(s) of the owner(s) and person(s) responsible for operation and maintenance.

D. Stormwater management easement(s).

- 1. Stormwater Management easements shall be indicated 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 one-hundred-year storm event.
 - c. Direct maintenance access by heavy equipment to structures requiring regular maintenance.
- 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 Stormwater Authority.
- 4. Easements and other applicable deed restrictions shall be recorded with the Registry of Deeds.

E. Maintenance responsibility. The owner of the property on which work has been done pursuant to these Regulations for private stormwater management facilities, or any other person or agent in control of such property, shall maintain in good condition and promptly

repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.

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

The owner shall maintain records of installation and maintenance and provide a brief annual report to the Stormwater Authority on all maintenance and repairs performed each year. The Stormwater Authority or its agent shall have authority to check all maintenance records.

F. Failure to maintain. If, after notice by the Building Inspector to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within 30 days, the Stormwater Authority or its agent may perform all necessary work to place the facility in proper working condition and/or seek a court order requiring the property owner or violator to perform the work. If the violation is an immediate threat to public health or public safety, 24 hours notice shall be sufficient prior to actions required to return the facility or practice to proper working condition. The owner(s) of the facility shall be assessed the cost of the work and any penalties, and such costs must be paid before the work is done. If costs are not paid in advance by the owner, the Town is authorized to place a lien on the property in the amount of these costs.

G. Changes to operation and maintenance plans. The owner(s) of the stormwater management system must notify the Stormwater Authority of changes in ownership or assignment of financial responsibility.

The maintenance schedule in the maintenance agreement may be amended to achieve the purposes of these Regulations by mutual agreement of the Stormwater Authority and the responsible parties. Amendments must be in writing and signed by all responsible parties. Responsible parties must include owner(s), persons with financial responsibility, and persons with operational responsibility, and easement grantors.

Section 9 As-Built Drawings

- A. As-Built Drawings. The permittee shall submit as-built drawings of all on-site stormwater controls and treatment practices, both structural and nonstructural, designed to manage the stormwater associated with the completed site. As-built drawings shall be full size plans that include all final grades and clearly depict all changes to project design from the approved plans, if any, and be certified by the Designer who must be a Massachusetts Registered Professional Engineer. These plans shall be submitted upon project completion, unless an extension is granted by the Stormwater Authority. Submission shall include one paper copy and digital format in pdf format.

Section 10 Contents for Stormwater Management & Erosion and Sediment Control Plan

- A. Stormwater management and erosion and sediment control plan. The application for a stormwater management permit shall consist of submittal of a stormwater management and erosion and sediment control plan, prepared by a professional engineer licensed by the Commonwealth of Massachusetts, which meets the stormwater regulations adopted by the Stormwater Authority and the design requirements provided by these Regulations.

The plan shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for reducing adverse impacts from construction stormwater runoff and post-development stormwater runoff. This shall include a narrative summary on how the applicant has addressed the standards in Section 7.

The plan shall comply with the standards and criteria established in these Regulations, the *Massachusetts Stormwater Management Handbook and Standards* as amended from time to time and must be submitted with the stamp and signature of a professional engineer (PE) licensed by the Commonwealth of Massachusetts. The applicant shall certify on the drawings that all clearing, grading, drainage, construction, and development shall be conducted in strict accordance with the plan.

The plan shall also include an Operation and Maintenance Plan as specified in Section 8 and any other information requested by the Stormwater Authority.

- B. Contents of the stormwater management plan.

The minimum information submitted for support of a stormwater management plan shall currently be as follows:

1. Names, addresses and phone numbers of the applicant, owner and preparer;
2. A locus map;

3. Existing conditions map showing:
 - a. Lot lines and lines of existing streets;
 - b. The existing zoning and land use at the site;
 - c. The existing site hydrology and topography at 2-foot intervals;
 - d. A description and delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which storm water flows;
 - e. A delineation of 100 and 500-year flood plains, if applicable;
 - f. Estimated seasonal high groundwater elevation (November to April) in areas to be used for storm water retention, detention, or infiltration;
 - g. 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; and
 - h. Existing stands of trees, and trees with a trunk diameter at breast height (4 feet above the surface of the ground) of 8 inches or more.
4. Existing conditions and proposed land use map showing:
 - a. The location(s) of existing and proposed easements;
 - b. The location of existing and proposed buildings and/or structures, including materials and approximate height;
 - c. The location of existing and proposed utilities, roadways; driveways, and parking areas;
 - d. The proposed limits of disturbance; and
 - e. Estimate of the total area expected to be disturbed by excavation, grading, or other construction activities;
5. Stormwater management design plan(s) and details showing:
 - a. The site's existing and proposed topography with contours at 2-foot intervals;
 - b. The existing and proposed vegetation and ground surfaces with runoff coefficient for each;
 - c. Soils information from test pits performed at the location of proposed stormwater management facilities, including soil descriptions, depth to season high groundwater, depth to bedrock, and infiltration rates. Soils information will be based on site test pits logged by a Massachusetts Registered Soil Evaluator, a Massachusetts Registered Sanitarian, or a Massachusetts Registered Professional Engineer;
 - d. A drainage area map showing pre- and post- development watershed boundaries, drainage area and storm water flow paths;
 - e. A description and drawings of all components of the proposed drainage system, including:

- locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization;
 - drainage patterns and approximate slopes anticipated after major grading activities;
 - all measures for the detention, retention or infiltration of water;
 - all measures for the protection of water quality;
 - the structural details for all components of the proposed drainage systems and storm water management facilities;
 - notes on drawings specifying materials to be used, construction specifications, and typicals;
 - expected hydrology with supporting calculations;
 - proposed improvements including location of buildings, utilities, or other structures, impervious surfaces, and drainage facilities, if applicable;
 - any other information requested by the Stormwater Authority
6. Hydrologic and hydraulic design calculations for the *pre-development and post-development conditions*. Calculations shall include:
- a. Hydrologic soils group (HSG) information, soil type, and relevant characteristics for the purpose of modeling the project's runoff, using NRCS soils information;
 - b. Description of design storm frequency, intensity, and duration;
 - c. Time of concentration;
 - d. Runoff Curve Number (RCN) based on land use and soil hydrologic group;
 - e. Pre and post development peak runoff rates and total runoff volumes for 2, 10, 25, and 100-year 24-hour storm events;
 - f. Infiltration rates where applicable;
 - g. Groundwater recharge analysis and BMP drawdown (time to empty)
 - h. Information on construction measures used to maintain the infiltration capacity of the soil where any kind of infiltration is proposed;
 - i. Culvert capacities;
 - j. Flow velocities;
 - k. Data on the increase in rate and volume of runoff for the specified design storms;
 - l. Data showing how project stormwater BMPs are optimized for nitrogen removal, using estimated Nitrogen load from the proposed project and the load reduction achieved through proposed BMPs (calculations should use material provided for in Attachment 1 of Appendix H of the Massachusetts MS4 Permit or as otherwise updated by EPA Region 1)
 - m. Data and documentation of sources for all computation methods and field test results showing how the project will meet stormwater runoff retention and/or water quality

requirements of New Development or Redevelopment specified in Section 7. This shall include either:

- Calculations showing runoff volume from the total post- development impervious surface area and retention of required volume
or
- Water quality design calculations showing the estimated Phosphorus load from the proposed project and the load reduction achieved through proposed BMPs (Attachments 2 and 3 in Appendix F of the Massachusetts MS4 Permit or as otherwise updated by EPA Region 1);
and
- Water quality design calculations showing the TSS load reduction achieved through proposed BMPs

n. Data showing BMP performance for land uses of higher potential pollutant loads if applicable.

o. Post-development downstream analysis, if deemed necessary by the Stormwater Authority. The downstream analysis will evaluate the hydrologic impacts of the project downstream of the project to a location where the watershed to project size is approximately equal to 10:1;

C. Contents of the erosion and sediment control plan

An erosion and sediment control plan, which must meet the design requirements in Section 7. Note above in Section 4 which projects are required to include the erosion and sediment control plan. The erosion and sediment control plan shall consist of:

1. Description of site conditions and location of details of selected erosion and sediment control measures appropriate to the site, including a narrative of the construction sequence/phasing of the project. The narrative should include both operation and maintenance for structural and non-structural measures, interim grading, and material stockpiling areas;
2. Path and mechanism to divert uncontaminated water around disturbed areas;
3. A description of provisions for project phasing with timing, schedules, and sequence of development, including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization.
4. Location and description of an implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures
5. Landscaping plan, showing and describing existing and proposed vegetation and the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practices;

6. A description of how demolition materials, litter, sanitary waste, and any other waste will be managed on site and a description of construction and waste materials expected to be stored on site. The Plan should 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;
7. A maintenance schedule for the period of construction;
8. Name and contact information for party responsible for maintaining erosion and sediment control measures.

Section 11 Surety

Where a performance bond is not required on another permit for a project, the Stormwater Authority may require from the developer a surety or cash bond, irrevocable letter of credit, or other means of security acceptable to the Town Treasurer prior to the issuance of any building permit for the construction of a development requiring a stormwater management facility. The bond shall be in an amount determined by the Stormwater Authority in consultation with the appropriate Town departments, to be sufficient to cover the cost of all or any part of the improvements at state (or, if applicable, federal) prevailing wage rates. The amount of the security shall not be less than the total estimated construction cost of the stormwater management facility. The surety so required in this section shall include provisions relative to forfeiture for failure to complete work specified in the approved stormwater management plan, compliance with all of the provisions of these Regulations and other applicable laws and regulations, and any time limitations.

The surety shall not be fully released without a final inspection report approved by the Stormwater Authority or its agent of the stormwater management facilities being in compliance with the approved plan and the provisions of these Regulations and submission of final as-built drawings and an operation and maintenance plan.

The Certificate of Occupancy may be withheld until all work has been completed based on the Stormwater Management Plan and to the satisfaction of the Stormwater Authority.

Section 12 Severability

The invalidity of any section or provision of these Regulations shall not invalidate any other section or provision thereof.

Appendix C

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

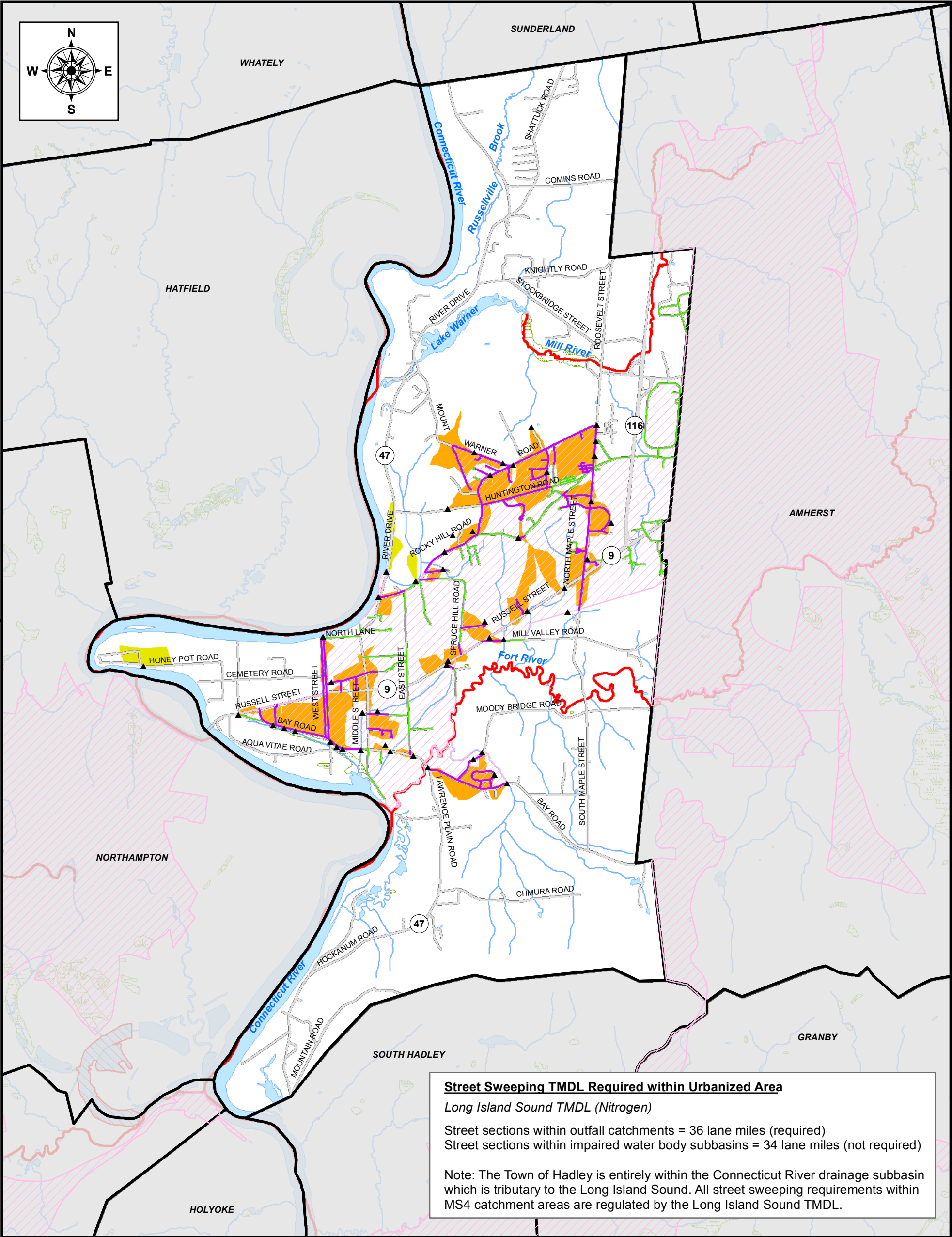
Appendix D

Inventory of Town-Owned Property

[illegible]

Appendix E

Street Sweeping Optimization Plan



Street Sweeping TMDL Required within Urbanized Area
Long Island Sound TMDL (Nitrogen)

Street sections within outfall catchments = 36 lane miles (required)
Street sections within impaired water body subbasins = 34 lane miles (not required)

Note: The Town of Hadley is entirely within the Connecticut River drainage subbasin which is tributary to the Long Island Sound. All street sweeping requirements within MS4 catchment areas are regulated by the Long Island Sound TMDL.

Legend

- ▲ MS4 Outfalls

Urbanized Area -

303d Water Bodies

Impaired Lake, Pond

Impaired River, Stream

Hydrography

Lake, Pond, River

Wetland

Stream, Brook
- Outfall Catchments**

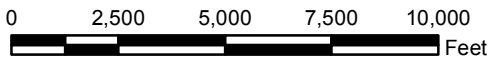
Discharges to Impaired Water Body Subbasin within UA

Catchment Outside of UA

Street Sweeping TMDL, within UA

Within MS4 Catchment (required)

Within Impaired Water Body Subbasin (not required)



Street Sweeping Map

Sweeping per Phase II Requirements

Hadley, Massachusetts



Comprehensive Environmental Inc.

Appendix F

Catch Basin Optimization Plan

Plan for Optimizing Catch Basin Cleaning

Hadley, MA

June 30, 2019

Prepared For:

Town of Hadley
100 Middle St
Hadley, MA 01035

Prepared by:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740



Table of Contents

Plan for Optimizing Catch Basin Cleaning – Hadley, MA

1	Introduction	1
2	Permit Requirements	1
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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 Hadley, 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 2.3.7.1.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 full¹;
- **Prioritize** inspection and maintenance for catch basins:
 - located near construction activities². 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 E. coli, solids, or phosphorus; 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 550 catch basins to clean and maintain. Refer to the map in **Appendix A**. Given the large number of basins and expense of cleaning, approximately 40 of the catch basins are cleaned each year using an outside contractor however does not document sediment accumulation for each basin. Hadley has prioritized certain catch basins that are cleaned more frequently, including those at the bottoms of hills, in high traffic areas such as the downtown district, or located in environmentally sensitive areas. The materials are stored at the DPW Garage.

4 Plans to Refine Catch Basin Cleaning Optimization

4.1 Optimization Methodology

Hadley will expand its current catch basin cleaning program to clean approximately 100 to 150 basins per year, including more frequent cleaning of catch basins with known higher sediment loads. During this time, it will collect data on the sump depth and sediment depth in each catch basin. A spreadsheet will be used to track sediment depth at each location. The catch basin inspection form included with the standard operating procedure (SOP) in **Appendix B** will be used to document data collected during cleaning.

Hadley anticipates taking approximately four years to collect and evaluate required data 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)

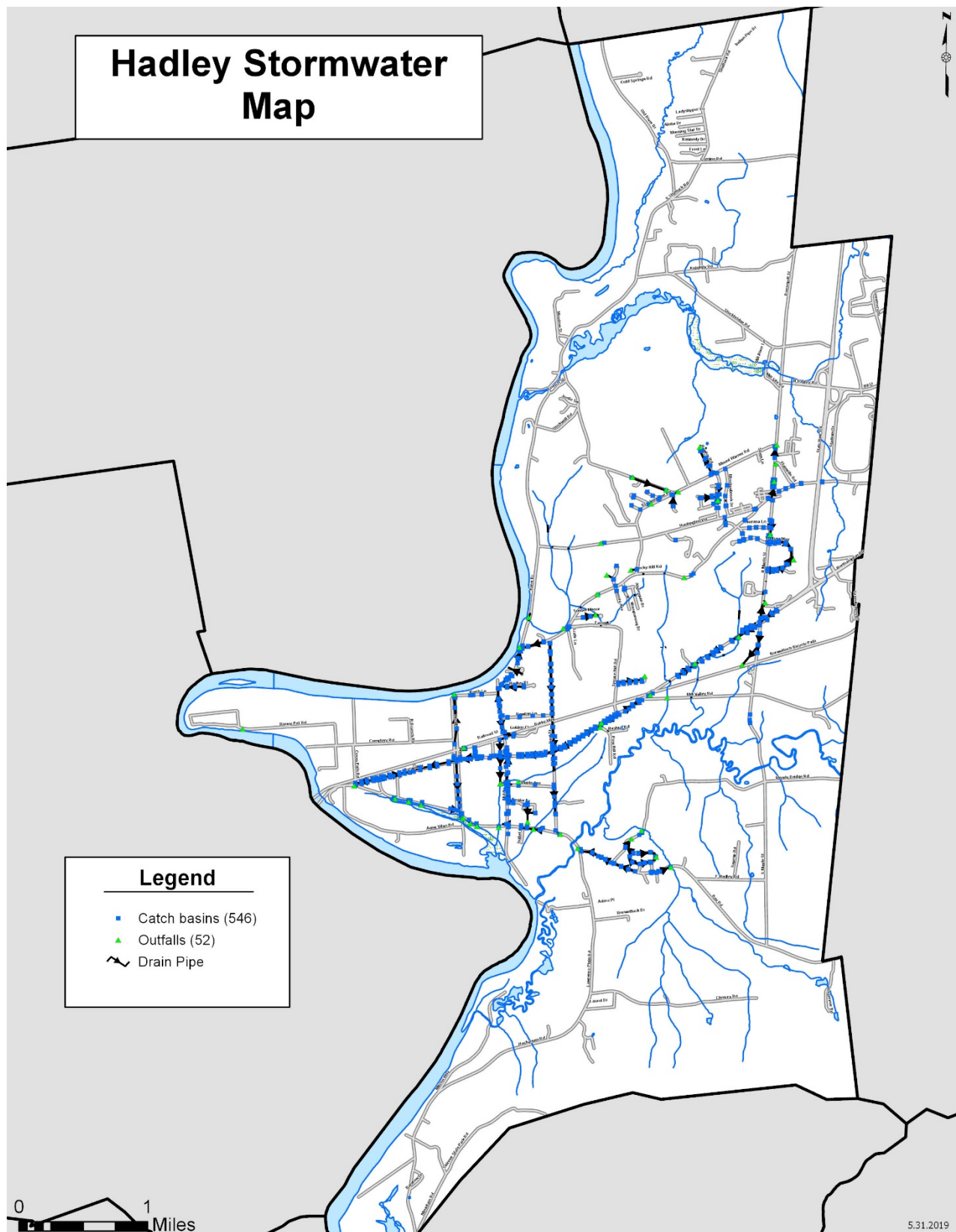
All catch basins will be inspected and cleaned following the standard operating procedures (SOP) provided in **Appendix B**.

4.3 Catch Basin Cleanings Storage and Disposal

Hadley currently stores catch basin cleanings the DPW Garage. The Town will explore possible beneficial uses for its collected catch basin cleanings.

Appendix A

Map of Drainage Infrastructure



Appendix B

Standard Operating Procedures for 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 if there are pollutants present.
 - Take photo of catch basin.
4. **Storage:** Bring cleanings to designated location at the transfer station 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			
<input type="checkbox"/> Road/Curb <input type="checkbox"/> Alley <input type="checkbox"/> Ditch <input type="checkbox"/> Parking Lot <input type="checkbox"/> Driveway <input type="checkbox"/> Sidewalk Other: _____		<input type="checkbox"/> Asphalt <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Grass/Dirt Other: _____				____ inches x ____ inches Material: _____ Shape: _____			
Catch Basin Condition									
CB Damage: No Yes		Comment: _____							
	<u>Materials (circle)</u>					<u>Condition (circle)</u>			
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: _____			

Appendix G

List of Stormwater BMPs

Appendix H

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 Hadley

EPA NPDES Permit Number: MAR041008

Primary MS4 Program Manager Contact Information

Name: Chris Okafor

Title: Director of Public Works

Street Address Line 1: 100 Middle Street

Street Address Line 2: na

City: Hadley

State: MA

Zip Code: 01035

Email: okaforc@hadleyma.org

Phone Number: (413)586-2390

Fax Number: na

Stormwater Management Program (SWMP) Information

SWMP Location (web address): <https://www.hadleyma.org/stormwater>

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:

<https://www.hadleyma.org/stormwater; IDDE Plan, Appendix B>
- ☒ 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:

<https://www.hadleyma.org/stormwater; IDDE Plan, Appendix C>
- ☒ 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 annual report

Lake and Pond Phosphorus TMDL

- ☐ Begin Phase 1 Lake Phosphorus Control Plan (LPCP)

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:

Stormwater BMP Inspections - The Town currently has no known town-owned stormwater BMPs within its regulated urbanized area. Should any BMPs be located during future years, the Town will begin annual inspections with maintenance performed as needed.

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

Public Education and Outreach - The Town developed a comprehensive public education program during Year 1. In part, this program consisted of assembling approximately 20 different outreach flyers with specific messages and topics for each of the Town's four audiences. During August 2019, the town developed an enhanced website with links to external websites and links for downloading multiple stormwater informational brochures. During August 2019, the Town also developed a detailed schedule for material distribution, including seasonal messages for bacteria water quality limited waterbody and nitrogen TMDL requirements. Local distribution of seasonal message outreach will start during fall 2019. Note that the Connecticut River Stormwater Committee distributed numerous public education and outreach, including seasonal messages related to fertilizer application, leaf litter, and dog waste pickup.

LPCP Phase 1 - The Town will begin preparation of its LPCP during Year 2, beginning with a legal analysis in accordance with permit schedule requirements.

Nitrogen Structural BMP Tracking - The Town will begin evaluation of its permittee-owned stormwater BMPs during future years in conjunction with preparing the nutrient source identification reports. It is expected this task will not start until at least Year 3.

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: 12

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

BMP: 15 to the River

Message Description and Distribution Method:

Video posted on social media that highlights how rain and contaminated stormwater are largest source of water pollution and how quickly these flows get to the river; with what you can do to help

Targeted Audience: Residents

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

YouTube views: 285 See: <https://www.youtube.com/watch?v=nvnGgWg-mSE&t=3s>

Message Date(s): December 2018

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

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

If yes, describe why the change was made:

Not included in NOI because not part of program to meet required messaging. Decided that good way to introduce residents in region to stormwater issues generally.

BMP: Think Blue - Fowl Water

Message Description and Distribution Method:

Video posted on social media explaining that stormwater pollution carries trash, oil cigarette butts, and dog waste.

Targeted Audience: Residents

Responsible Department/Parties: State-wide Think Blue MA for Connecticut River Coalition

Measurable Goal(s):

watched 10+ seconds on FB = 22,718; on You Tube = 87,482

Message Date(s): May 31 to June 25, 2018

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

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

If yes, describe why the change was made:

Not included in NOI because not part of plan to meet required messaging. Decided that good way to introduce residents in region to stormwater issues generally.

BMP: Think Blue - Fowl Water

Message Description and Distribution Method:

Video posted on social media explaining that stormwater pollution carries trash, oil cigarette butts, and dog waste

Targeted Audience: Residents

Responsible Department/Parties: State-wide Think Blue MA for Connecticut River Coalition

Measurable Goal(s):

Facebook impressions: 358,297; YouTube impressions: 292,655

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

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

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

If yes, describe why the change was made:

Not included in NOI because not part of plan to meet required messaging. Decided that good way to introduce residents in region to stormwater issues generally.

BMP: How to Soak Up the Rain Around your Home and Garden

Message Description and Distribution Method:

Workshop at Hadley Garden Center with interactive elements to promote understanding about stormwater and to stimulate thinking about building stormwater BMPs around the home and garden

Targeted Audience: Residents

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

63 people from around the region participated in 90-minute workshop; participants took soak up the rain

porous paving and rain garden lawn signs at end of workshop

Message Date(s): March 2, 2019

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

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

If yes, describe why the change was made:

Not included in NOI because not part of plan to meet required messaging. Opportunity arose and decided that good way to continue promoting soak up the rain effort.

BMP: Get Wise About Leaf Litter

Message Description and Distribution Method:

Flyer and social media post that promotes 4 BMPs in managing leaf litter (mulch in place; compost; offer to neighbor who may compost; proper disposal) with list of local disposal locations on reverse side.

Targeted Audience: Residents

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

325 flyers distributed at 12 of the regions larger home & garden centers; one flyer laminated and hung for display at W. Springfield Home Depot. FB impressions: 104, Impressions from PVPC regional e-newsletter: 347

Message Date(s): October 1 -November 15, 2018

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

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

If yes, describe why the change was made:

BMP: Get Wise About Your Lawn

Message Description and Distribution Method:

Flyer, tri-fold brochure, and social media post that highlights problem with fertilizers and seeks to normalize practice around 4 BMPs (test your soil, leave clippings where they fall, choose the right fertilizer, mow high). Also mentions restrictions on phosphorous use.

Targeted Audience: Residents

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

FB impressions: 6,507. Impressions from PVPC regional e-newsletter: 386

Message Date(s): May 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: Think Picking up Spike's Poop is Gross? Try Swimming in It.

Message Description and Distribution Method:

Poster and social media post that highlights what happens with dog waste that is left on the ground.

Targeted Audience: Residents

Responsible Department/Parties: Connecticut River Stormwater Committee/MS4

Measurable Goal(s):

FB impressions: 4,396. Posters distributed: 125

Message Date(s): June-July 2019

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

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

If yes, describe why the change was made:

BMP: Why should you care as a professional landscaper? Best leaf litter practices.

Message Description and Distribution Method:

Personalized mailing developed with input from Umass Cooperative Extension

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

Reached 26 landscaping companies in the region

Message Date(s): October 26, 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: Why should you care as a professional landscaper? Better land care practices.

Message Description and Distribution Method:

Personalized mailing developed with input from Umass Cooperative Extension

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

Reached 127 landscaping companies in the region

Message Date(s): May 15, 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: Best practices with residential geese

Message Description and Distribution Method:

Personalized mailing developed with input from Mass Fish & Wildlife on bmps for managing geese

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Connecticut River Stormwater Committee

Measurable Goal(s):

None yet.

Message Date(s): Pending

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:

Message had been planned for June-July time frame, but meaningful long-term solution on how to manage geese not yet established. Stormwater Committee had several exchanges with Mass Fish & Wildlife in order to devise recommendations and is currently seeking good technical assistance resource for these landowners in the region with goose problems.

BMP: Stormwater Website

Message Description and Distribution Method:

Develop a town stormwater website with a links to external sites such as EPA and MassDEP, as well as provide stormwater brochures for download.

Targeted Audience: Residents, Businesses, institutions and commercial, Developers, Industrial

Responsible Department/Parties: Department of Public Works

Measurable Goal(s):

Create a website and complete periodic updates.

Message Date(s): Ongoing

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

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

If yes, describe why the change was made:

BMP: Video, After the Storm

Message Description and Distribution Method:

Televis EPA's "After the Storm" video on the local cable access channel.

Targeted Audience: Residents

Responsible Department/Parties: Hadley Media (HPAT)

Measurable Goal(s):

Televis informational video at least twice per year.

Message Date(s): May 24, 2019 and June 23, 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:

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.

NPDES Steering Committee - Established a NPDES Steering Committee to oversee permit implementation including members from applicable town boards and departments.

Household Hazardous Waste (HHW) Day - In partnership with nearby communities, residents may dispose of household hazardous waste at an annual event held every May.

IDDE Reporting - Contact information for reporting suspected or potential illicit discharges is provided on the Town's website and in other IDDE-related fact sheets and brochures.

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:

Our municipality participated in the Massachusetts Statewide Municipal Stormwater Coalition (Statewide Coalition). The Statewide Coalition presented on the Think Blue Massachusetts public awareness campaign and regional collaboration on stormwater at the following public events:

- Metrowest/495 Partnership (October 4, 2018)
- MetroWest Stormwater Roundtable hosted by MetroWest Regional Collaborative (MWRC) of the
- Metropolitan Area Planning Council (MAPC) (November 20, 2018)
- Massachusetts Municipal Association (MMA) Meeting & Trade Show (Jan 18-19 2019)
- New England Water Environment Association Annual Conference (Jan 28 2019)
- Massachusetts Association of Conservation Commissions Annual Conference (March 2, 2019)
- Massachusetts Congress of Lake and Pond Associations Annual Workshop (April 12, 2019)
- New England American Public Works Association Spring Conference (April 17, 2019)
- Ecotarium Earth Day activities (April 16 – 19, 2019)
- New England Water Environment Association Spring Meeting (June 4, 2019)

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

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

Number of SSOs identified:

Number of SSOs removed:

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:

Total number of SSOs removed:

MS4 System Mapping

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

The Town has completed multiple Phase I mapping requirements under the 2016 Permit. All known outfalls, catch basins, manholes, receiving waters, and impaired waters within the Town's urbanized area have been mapped. The Town will work toward identifying its stormwater treatment structures, 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:

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

Number of outfalls screened:

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

Percent of total outfalls screened:

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 yet started

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, none found to date

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

Number of illicit discharges identified: 0

Number of illicit discharges removed: 0

Estimated volume of sewage removed: 0 [UNITS]

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

Total number of illicit discharges identified: 0

Total number of illicit discharges removed: 0

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

N/A, none found to date

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:

Number of inspections completed:

Number of enforcement actions taken:

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 current Town bylaws and regulations are partially in compliance with the Year 2 requirements, however do not meet all requirements pertaining to new development and redevelopment. The Town will draft a revised bylaw and accompanying regulations to meet all Year 2 requirements, and it is anticipated that revisions will be put up for vote at the spring 2020 town meeting.

As-built Drawings

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

As part of the regulatory updates to be performed during Year 2, procedures for submittal of as-built drawings and long term operation and maintenance will be developed.

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 is currently developing an inventory of its permittee-owned properties. Once completed, facilities will be evaluated for potential BMP retrofit opportunities during future permit years.

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

The Town developed a Catch Basin Cleaning Optimization Plan during Permit Year 1 as a component of its SW

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:

<https://www.hadleyma.org/stormwater; SWMP Plan, Appendix G>

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:

Number of catch basins cleaned:

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

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

Total number of catch basins:

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 Optimization Plan during Permit Year 1 as a component of its SWMP Plan. This consists of a map displaying sweeping requirements throughout the Town and a Standard Operating Procedure (SOP) for completing the sweeping. Although no sweeping was performed in Year 1, the Town began sweeping in August 2019 and swept a total of 8 miles of roadway, generating 40 loads of material.

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

☐ Number of miles cleaned:

☐ 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 known trouble areas, such as projects with 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 Optimization Plan. In addition, town residents periodically call the DPW to report localized areas needing sweeping that DPW personnel then visit to inspect. Should areas in need of additional sweeping be observed, the Town documents these areas as part of its Street Sweeping Optimization Plan and schedules areas for sweeping during the next upcoming round. Note that the Town applies no 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 SOPs for winter road maintenance during Permit Year 1. These SOPs 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:

The Town is currently developing an inventory of its permittee-owned properties, to be completed 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:

The Town is currently developing O&M Procedures for its Parks and Open Spaces, Buildings and Facilities, and Vehicles and Equipment, to be completed by the end of 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:

The Town is currently working towards completing SWPPPs for applicable facilities. The Town completed a preliminary review of its facilities during Year 1 and determined that only one facility is likely applicable and within the regulated area, the DPW Garage. During Year 2, the Town will complete a more comprehensive facility assessment and complete SWPPPs for applicable facilities by the end of 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:

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

N/A, not yet started.

O&M Procedures for Stormwater Treatment Structures

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

The Town currently has no known town-owned stormwater BMPs within its regulated urbanized area. Should any BMPs be located during future years, the Town will begin annual inspections with maintenance

performed as needed.

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, not yet started.

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 performed during Year 1 include submittal of a Notice of Intent, development of a comprehensive Stormwater Management Program (SWMP) Plan which in part also included development of a Catch Basin Cleaning Optimization Plan and Street Sweeping Optimization Plan, development of a comprehensive Illicit Discharge Detection and Elimination (IDDE) Plan which in part included creation of procedures for identifying and removing illicit discharges along with classifying, prioritizing, and delineating catchment areas. Other activities completed included development of winter operation and maintenance procedures and completing an assessment of existing stormwater-related regulatory mechanisms.

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:

As dry weather inspections are required for all regulated outfalls by the end of Year 3, the Town anticipates beginning these inspections during Year 2 to get a head start on sampling requirements. This will allow the Town more time to complete the inspections by the Year 3 deadline.

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:

David G. Nixon

Title:

Town Administrator

Signature:



Date:

9/27/19

[Signatory may be a duly authorized representative]

Year 2 Annual Report

Massachusetts Small MS4 General Permit

Reporting Period: July 1, 2019-June 30, 2020

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

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

Part I: Contact Information

Name of Municipality or Organization: Town of Hadley

EPA NPDES Permit Number: MAR041008

Primary MS4 Program Manager Contact Information

Name: Chris Okafor

Title: Director of Public Works

Street Address Line 1: 100 Middle Street

Street Address Line 2:

City: Hadley

State: MA

Zip Code: 01035

Email: okaforc@hadleyma.org

Phone Number: (413) 586-2390

Stormwater Management Program (SWMP) Information

SWMP Location (web address): <https://www.hadleyma.org/stormwater>

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:

Phase I mapping - 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.

As-Built and Long-Term O&M - the Town is working on incorporating procedures for submittal of as-builts and require long term operation and maintenance as part of its stormwater regulatory updates to be completed as part of the Year 3 requirements under EPA's pending updated permit schedule. As a result of the COVID-19 outbreak, regulations were not updated as planned during Permit Year 2.

Annual Requirements

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

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

IDDE Training - training was not performed during this permit year due to COVID-19 social distancing requirements and limited staff availability; however was completed on August 21, 2020 prior to submittal of this Annual Report.

Outfall Inventory and Ranking - 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:

Public Education - Information related to pet waste and septic system maintenance is available continuously on the Town's website.

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:

Public Education - Information related to fertilizer usage and lawn care, pet waste, and leaf litter disposal is available continuously on the Town's website.

Street Sweeping - streets were swept only once during Year 2.

Structural BMPs - The Town currently has no known town-owned stormwater BMPs within its regulated

urbanized area. Should any BMPs be located during future years, the Town will compute nitrogen removal provided by this BMP and begin annual inspections with maintenance performed as needed.

Lake and Pond Phosphorus TMDL

☒ Completed Legal Analysis

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

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

Dry Weather Outfall Screening - The Town attempted to inspect all 51 known stormwater outfalls during dry weather for potential illicit discharges. Of the 51 known stormwater outfalls that were inspected, 42 were located and 2 of which were flowing. Both flowing outfalls were sampled and neither met the permit criteria for being highly likely to contain illicit discharges. 2 additional outfalls exhibited olfactory evidence of sewage, however, 1 outfall was located next to a sewer pump station and is the likely source of the odor. A second outfall will be investigated for potential illicit discharges, however, the continuing area is only a single catch basin and thus illicit discharge potential is minimal. The Town will attempt to locate and inspect the remaining 9 outfalls for dry weather flows during Year 3.

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 following changes were made that do not affect TMDL and Impaired Waters requirements:

-Connecticut River (MA34-04), PCBs in Fish Tissue impairment added to 303(d) list

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:**

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: 15 to the River

Message Description and Distribution Method:

Video posted on social media that highlights how rain and contaminated stormwater are largest source of water pollution and how quickly these flows get to the river; with what you can do to help

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

YouTube views: 220 See: <https://www.youtube.com/watch?v=nvnGgWg-mSE&t=3s>

Message Date(s):

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

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

If yes, describe why the change was made:

Not included in NOI because not part of program to meet required messaging. Decided that good way to introduce residents in region to stormwater issues generally.

BMP: Think Blue - Fowl Water

Message Description and Distribution Method:

Video posted on social media explaining that stormwater pollution carries trash, oil cigarette butts, and dog waste.

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

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

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

If yes, describe why the change was made:

Not included in NOI because not part of plan to meet required messaging. Decided that good way to introduce residents in region to stormwater issues generally.

BMP: Stormwater Website

Message Description and Distribution Method:

Develop a town stormwater website with a links to external sites such as EPA and MassDEP, as well as provide stormwater brochures for download.

Targeted Audience: Residents, Businesses, institutions and commercial, Developers, Industrial

Responsible Department/Parties: Department of Public Works

Measurable Goal(s):

Create a website and complete periodic updates.

Message Date(s): Ongoing

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

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

If yes, describe why the change was made:

BMP:Pet Waste Brochures

Message Description and Distribution Method:

Distribute fact sheets or brochures on pet waste pickup with dog licenses

Targeted Audience: Residents

Responsible Department/Parties: Town Clerk

Measurable Goal(s):

Provide information with all applications and renewals

Message Date(s): Ongoing

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

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

If yes, describe why the change was made:

BMP:Leaf Litter Flyers

Message Description and Distribution Method:

Provide flyers on leaf litter disposal at Town Hall

Targeted Audience: Residents

Responsible Department/Parties: Department of Public Works

Measurable Goal(s):

Provide flyers on leaf litter disposal at Town Hall

Message Date(s): Ongoing

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

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

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

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

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

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

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

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:

Number of SSOs removed:

MS4 System Mapping

Below, check all that apply.

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

- ☒ Outfalls and receiving waters
- ☐ Open channel conveyances
- ☐ Interconnections
- ☒ Municipally-owned stormwater treatment structures
- ☒ Waterbodies identified by name and indication of all use impairments
- ☒ Initial catchment delineations

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

Phase I mapping - the Town has mapped all known outfalls and receiving waters/waterbodies, open channel conveyances, stormwater BMPs (note, none known), and completed initial catchment delineations. Additionally, most of the known catch basins, manholes, and some piping has been mapped which is not required until Year 10. Mapping of open channel conveyances and any newly located outfalls is ongoing. Interconnections with other MS4 systems, particularly MassDOT along the Route 9 corridor, is ongoing as MassDOT is actively doing construction along this roadway at the time of writing this Annual Report. The Town expects that MassDOT will lead the effort to map interconnections as part of their ongoing work and/or 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.

- ☒ 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:

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:

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

Percent of total catchments investigated:

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

IDDE Progress

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

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

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

Number of illicit discharges identified:

Number of illicit discharges removed:

Estimated volume of sewage removed: 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:

Total number of illicit discharges removed:

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

Employee Training

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

Training was not performed during this permit year due to COVID-19 social distancing requirements and limited staff availability; however was completed on August 21, 2020 prior to submittal of this Annual Report.

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:

Number of inspections completed:

Number of enforcement actions taken:

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

The Town did not complete any site plan reviews or inspections during Year 2 due in part to COVID-19.

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 is working on incorporating procedures for submittal of as-builts and require long term operation and maintenance as part of its stormwater regulatory updates to be completed as part of the Year 3 requirements under EPA's pending updated permit schedule.

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 during this permit year. 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:

Number of catch basins cleaned:

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

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

Total number of catch basins:

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.

Street Sweeping

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

☒ Number of miles cleaned:

☐ Volume of material removed:

☐ Weight of material removed:

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:

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

Not applicable, no corrective actions have been taken to date. Note that a SWPPP for the DPW Garage and Wastewater Treatment Facility was completed on June 30, 2020. Quarterly site inspections will begin during 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:

N/A, not started yet.

Additional Information

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

The MS4 Permit requires the Town to achieve a significant reduction in phosphorus loads to waters with phosphorus TMDLs, a significant portion of which comes from existing privately developed properties that discharge to the Town's MS4 or directly to surface waters. These existing private properties are currently not subject to stormwater permits and are not regulated to reduce their share of phosphorus contributions to TMDL waters. Instead, the Town is responsible for achieving phosphorus reductions from these private developments because these developments are located within Hadley's MS4. The Town would like to see a state or federal level stormwater permit for existing large commercial, industrial and institutional properties located within TMDL watersheds, similar to that in Vermont or that proposed for the Charles River Watershed in Massachusetts, with the same phosphorus or more stringent reduction requirements that the MS4 permitted communities are required to achieve to help mitigate impacts from private properties.

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:

Public Education and Participation - numbers of flyers provided in public buildings taken by residents is unknown and likely minimal as these locations were closed to the public during much of Year 2.

IDDE Training - training was not performed during this permit year due to COVID-19 social distancing requirements and limited staff availability; however was completed on August 21, 2020 prior to submittal of this Annual Report.

As-Builts and Long-Term O&M - the Town is working on incorporating procedures for submittal of as-builts and require long term operation and maintenance as part of its stormwater regulatory updates to be completed as part of the Year 3 requirements under EPA's pending updated permit schedule. As a result of the COVID-19 outbreak, regulations were not updated as planned during Permit Year 2.

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:

The SWMP Plan and IDDE Plan will be updated during FY-21 to address all work performed through Year 3. This will include incorporating the above items into the SWMP Plan and/or IDDE Plan as necessary, incorporate results from outfall dry weather screening, as well as documenting results of other annual activities below such as BMP inspections.

Hadley also intends to begin preparation of a Lake Phosphorus Control Plan (LPCP) for Lake Warner during Year 3 to begin to assess future costs to the Town.

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:

Carolyn Brennan

Title:

Town Administrator

Signature:



Date:

9/22/2020

[Signatory may be a duly authorized representative]

Year 3 Annual Report

Massachusetts Small MS4 General Permit

Reporting Period: July 1, 2020-June 30, 2021

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

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed. Please ONLY report on activities between July 1, 2020 and June 30, 2021 unless otherwise requested.

Part I: Contact Information

Name of Municipality or Organization: Town of Hadley

EPA NPDES Permit Number: MAR041008

Primary MS4 Program Manager Contact Information

Name: Chris Okafor

Title: Director of Public Works

Street Address Line 1: 100 Middle Street

Street Address Line 2:

City: Hadley

State: MA

Zip Code: 01035

Email: okaforc@hadleyma.org

Phone Number: (413) 586-2390

Stormwater Management Program (SWMP) Information

SWMP Location (web address): <https://www.hadleyma.org/stormwater>

Date SWMP was Last Updated: July 7, 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 - During 2019 and 2021, the Town attempted to inspect all 51 known stormwater outfalls within the urbanized area during dry weather to investigate for potential illicit discharges. Of the 51 known stormwater outfalls that were attempted to be inspected, 48 were located and 4 of which were flowing. The 4 flowing outfalls were sampled and 1 met the permit criteria for being highly likely to contain illicit discharges (ammonia=4 mg/L, chlorine=0.08 mg/L, surfactants=1.04 mg/L, e.coli=170 colonies/100 mL). This outfall will be further investigated in Year 4 and beyond if necessary. The remaining 3 outfalls that could not be located or accessed were instead investigated at the immediate upgradient structure for potential illicit discharge indicators, of which none were observed. Note, numbers above represent all outfall screening completed to date. Numerous outfalls were revisited between Year 2 and Year 3 and thus it is difficult to quantify the number of outfalls screened in individual years.

Update Outfall Inventory and Priority Ranking - Outfall inventory and priority ranking was conducted concurrent with a comprehensive update of the SWMP and IDDE Plans, completed on July 7, 2021. The

Town will continue to locate and inspect additional stormwater infrastructure during future permit years.

Construction and Post-Construction Bylaw - The Town established a “Stormwater Management and Erosion and Sediment Control” bylaw under Section 195, Article III of the Town’s general bylaws, (adopted November 7, 2019) and accompanying “Stormwater Management & Erosion and Sediment Control Regulations” (adopted July 7, 2021) which regulate construction projects greater than 1 acre. This bylaw and accompanying regulations meet all permit requirements for construction and post-construction requirements, including provisions for new/redevelopment to remove 90%/80% of total phosphorus and 60%/50% of total suspended solid, respectively. Bylaws were adopted by the Year 3 deadline, however, regulations were adopted just after the June 30, 2021 deadline (by 7 days).

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:

Public Education - Information related to pet waste and septic system maintenance is available continuously on the Town's website.

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:

Public Education - Information related to fertilizer usage and lawn care, pet waste, and leaf litter disposal is available continuously on the Town's website.

Street Sweeping - streets were swept only once during Year 3.

Structural BMPs - The Town currently has no known town-owned stormwater BMPs within its regulated urbanized area. Should any BMPs be located during future years, the Town will compute nitrogen removal provided by this BMP and begin annual inspections with maintenance performed as needed.

Lake and Pond Phosphorus TMDL

- ☒ Completed the funding source assessment

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

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 following changes were made that do not affect TMDL and Impaired Waters requirements:

-Connecticut River (MA34-04), PCBs in Fish Tissue impairment added to 303(d) list

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:**

*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: Video, ThinkBlue Massachusetts "Fowl Water"

Message Description and Distribution Method:

ThinkBlue Massachusetts "Fowl Water" video (<https://www.thinkbluemassachusetts.org/>) Advertisement on Facebook, Instagram, & YouTube.

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Social media impressions for the town totaled 16,840

Message Date(s):

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

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

If yes, describe why the change was made:

BMP: Stormwater Website

Message Description and Distribution Method:

Develop a town stormwater website with a links to external sites such as EPA and MassDEP, as well as provide stormwater brochures for download.

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Create a website and complete periodic updates.

Message Date(s): Ongoing / Continuous

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 Brochures

Message Description and Distribution Method:

Distribute fact sheets or brochures on pet waste pickup with dog licenses

Targeted Audience: Residents

Responsible Department/Parties: Town Clerk

Measurable Goal(s):

Provide information with all applications and renewals

Message Date(s): Ongoing / Continuous

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: Seasonal Messages

Message Description and Distribution Method:

Post seasonal messages on fertilizer application methods, pet waste cleanup, septic system maintenance, and leaf litter removal on the town stormwater website for download

Targeted Audience: Residents, Businesses, institutions and commercial

Responsible Department/Parties: Department of Public Works

Measurable Goal(s):

Make seasonal messages available on the website for use by target audience members

Message Date(s): Ongoing / Continuous

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 and other relevant information on Town website along with contact information to allow for public comment.

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

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

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:

Number of SSOs removed:

MS4 System Mapping

Optional: Provide additional status information regarding your map:

All known outfalls, catch basins, manholes, 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:

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

Percent of outfalls screened:

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

During 2019 and 2021, the Town attempted to inspect all 51 known stormwater outfalls within the urbanized area during dry weather to investigate for potential illicit discharges. Of the 51 known stormwater outfalls that were attempted to be inspected, 48 were located and 4 of which were flowing. The 4 flowing outfalls were sampled and 1 met the permit criteria for being highly likely to contain illicit discharges (ammonia=4 mg/L, chlorine=0.08 mg/L, surfactants=1.04 mg/L, e.coli=170 colonies/100 mL). This outfall will be further investigated in Year 4 and beyond if necessary. The remaining 3 outfalls that could not be located or accessed were instead investigated at the immediate upgradient structure for potential illicit discharge indicators, of which none were observed. Note, numbers above represent all outfall screening completed to date. Numerous outfalls were revisited between Year 2 and Year 3 and thus it is difficult to quantify the number of outfalls screened in individual years.

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:

Employee Training

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

An on-site IDDE training session was held on June 9, 2021 with applicable DPW staff. This session also provided training on Stormwater Pollution Prevention Plan (SWPPP) implementation and inspections at the

DPW Garage.

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:

Number of inspections completed:

Number of enforcement actions taken:

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

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

As-built Drawings

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

Number of as-built drawings received:

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 Permit 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 Permit Year 4.

Retrofit Properties Inventory

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

The Town completed an inventory of its permittee-owned properties during this permit year. Facilities will be evaluated for potential BMP retrofit opportunities during Permit 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:

Number of catch basins cleaned:

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

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

Total number of catch basins:

If applicable:

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

Street Sweeping

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

☒ Number of miles cleaned: 32

☐ Volume of material removed:

[Select Units]

☐ Weight of material removed:

[Select Units]

Stormwater Pollution Prevention Plan (SWPPP)

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

Number of site inspections completed: 4

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

Not applicable, no corrective actions have been taken to date.

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.

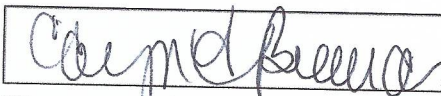
Name:

Carolyn Brennan

Title:

Town Administrator

Signature:



Date:

9/23/21

[Signatory may be a duly authorized representative]