

Welcome to Mendon Ma



# Stormwater Management Plan

Town of Mendon

June 2019

Updated: June 2022

**Tighe&Bond**  
Engineers | Environmental Specialists

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# Section 1

## Introduction

Mendon is located in Worcester County in Central Massachusetts, approximately 20 miles southeast of the City of Worcester. It is abutted by the Town of Bellingham to the east, the Towns of Hopedale and Upton to the north, the Towns of Uxbridge and Northbridge to the west, and the Towns of Millville and Blackstone to the south. There are approximately 0.2 square miles of surface water within its 18.3 square mile footprint.



**Figure 1-1** Location of Mendon, Massachusetts

According to the 2010 United States (U.S.) Census, Mendon is home to approximately 5,840 residents in more than 2,000 households.

Protecting the quality of Mendon’s water resources, including lakes, ponds, rivers, and groundwater supplies is a priority for the Town of Mendon. Pollutants from stormwater runoff are a contributing factor to the impairment of Mendon’s waterbodies, including bacterial contamination in Mill Brook and high levels of phosphorus in the Charles River. The Town has developed stormwater policy initiatives, provided education to its businesses and citizens, publicly discussed the issues related to stormwater runoff, and offered many opportunities for residents and businesses to pitch in with clean-up efforts.

### 1.1 Purpose of this Plan

In an on-going effort to minimize stormwater impacts within Mendon, the Town has developed this Stormwater Management Plan (SWMP). The SWMP is required by the U.S. Environmental Protection Agency’s (EPA’s) National Pollutant Discharge Elimination System (NPDES) General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts (“Small MS4 General Permit”). The SWMP describes and details the activities and measures that will be implemented by Mendon to meet the terms and conditions of the permit.

The SWMP will be updated during the permit term as the Town’s activities are modified, changed, or updated to meet permit conditions. Other requirements of the Small MS4 General Permit, such as a Notice of Intent (NOI), Authorization to Discharge letter, and documentation showing Endangered Species Act and Historic Properties eligibility criteria have been certified and are located in the Appendices of this Plan.

## 1.2 Regulatory Requirements

### 1.2.1 Overview of EPA's NPDES MS4 Program

Through the NPDES program, the EPA nationally regulates the discharge of stormwater runoff that is transported into waters of the U.S. EPA's MS4 stormwater program was enacted in two phases:

- Phase I, issued in 1990, requires *medium* and *large* cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges.
- Phase II, issued in 1999, requires regulated *small* MS4s in urbanized areas, as well as small MS4s outside the urbanized areas that are designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges.

A **municipal separate storm sewer system (MS4)** is a conveyance or system of conveyances that is:

- owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.,
- designed or used to collect or convey stormwater (e.g., storm drains, pipes, ditches),
- not a combined sewer, and
- not part of a sewage treatment plant, or publicly owned treatment works (POTW).

In Massachusetts, the EPA Region 1 and the Massachusetts Department of Environmental Protection (MassDEP) jointly administer the municipal stormwater program. EPA and MassDEP originally authorized Mendon to discharge stormwater in 2003 under a *NPDES General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems*, known as the "2003 General Permit." Under this permit, the Town has developed and implemented a Stormwater Management Program to reduce the contamination of stormwater runoff.

The 2003 General Permit expired in May 2008 but remained in full force and effect until a replacement permit was issued on April 13, 2016. The reissued NPDES *General Permit for Stormwater Discharges from Small MS4 in Massachusetts* substantially increases stormwater management requirements and mandates specific timelines for compliance. On June 30, 2017, an EPA stay delayed the effective date of the General Permit until July 1, 2018. The MassDEP also adopted this delayed effective date.

This SWMP was developed to be consistent with the requirements of the 2016 Small MS4 General Permit for Massachusetts. Once implemented, the SWMP described herein will satisfy the requirements for compliance under the 2016 General Permit.

The reissued General Permit is intended to be more prescriptive than the 2003 General Permit, and to build upon the regulations already in place. The 2016 General Permit substantially increases stormwater management requirements and mandates specific timelines for compliance. A few of the major differences for each minimum control measure are summarized in the following points:

- **Public Education and Outreach:** More specific messages required, and prescriptive deadlines compared to the 2003 General Permit.

- **Public Involvement and Participation:** No substantial change from the 2003 General Permit.
- **Illicit Discharge Detection and Elimination (IDDE) Program:** Complete drainage system mapping, building on outfall mapping developed under the 2003 General Permit. Add interconnections to the outfall inventory. Delineate catchment areas and prioritize catchment investigations. Perform dry weather screening and sampling of high priority and low priority MS4 interconnections and outfalls by the end of Year 3. Perform wet weather screening in the spring for the catchments that indicate the presence of one or more System Vulnerability Factors. Complete catchment investigations. For impaired waters without Total Maximum Daily Loads (TMDLs), implement a multi-step approach to address the discharges including BMPs, source identification, and an evaluation of retrofit feasibility.
- **Construction Site Stormwater Runoff Control:** If it does not already exist, add inspection and enforcement to the site plan review procedure.
- **Stormwater Management in New Development and Redevelopment:** For new development, retain the first 1 inch of runoff from all impervious surfaces on site, or provide pollutant removal with a BMP. For redevelopment, retain the first 0.80 inches of runoff from all impervious surfaces on site or provide pollutant removal with a BMP. Offsite mitigation may be used for redevelopment projects. Evaluate local code for consistency with smart growth principles and green infrastructure.
- **Good Housekeeping and Pollution Prevention:** Develop a program to repair and rehabilitate the MS4 infrastructure. Sweep/clean municipal streets once in the spring. Include all activities that occur at a municipal facility and potential pollutants associated with each activity in the stormwater pollution prevention plan (SWPPP) for the facility.

### 1.2.2 Mendon's Regulated Area

The Town of Mendon meets EPA's regulatory threshold for Phase II of the MS4 program, and therefore is required to be covered under a NPDES permit for its stormwater discharges from the MS4 in its Urbanized Area. The Town of Mendon is charged by the EPA with operating and maintaining its MS4 to manage stormwater runoff, as well as taking steps to reduce pollution in stormwater runoff. Additional objectives of the program are to protect public health and safety, preserve environmental resources, and safeguard town character.

Urbanized Areas (also known as "regulated areas") are defined by the latest U.S. decennial census. On March 26, 2012, the Census Bureau published the final listing of urbanized areas for the 2010 census. An urbanized area encompasses a densely settled territory that consists of core census block groups or blocks that have a population of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile or are included to link outlying densely settled territory with a densely settled urban core.<sup>1</sup> According to EPA Region 1, the area covered by *both*

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<sup>1</sup> U.S. EPA. *Fact Sheet: Draft General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts*. September 2014. For a complete definition of Urbanized Area see Federal Register, August 24, 2011. Vol. 76 No. 164 p. 53030. URL: <http://www2.census.gov/geo/pdfs/reference/fedreg/fedregv76n164.pdf>.

the 2000 census and the 2010 census are regulated by EPA under the MS4 program. Therefore, sections of central, eastern and southern Mendon are regulated, as seen in Figure 1-2, and the SWMP must be implemented within those portions of Mendon at a minimum.<sup>2</sup>

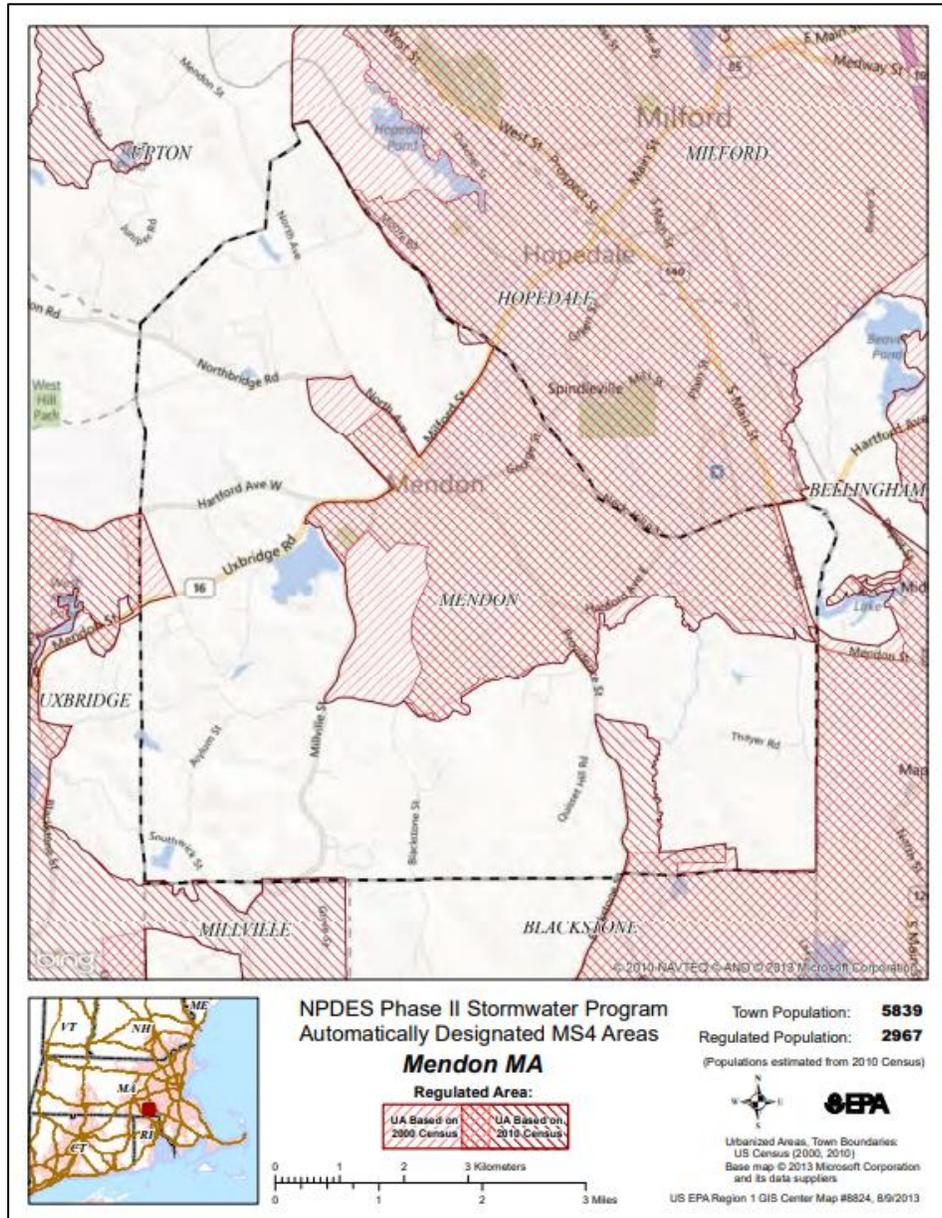


Figure 1-2 Town of Mendon’s Urbanized Area based on 2000 and 2010 census

<sup>2</sup> U.S. EPA, 2014.

## **1.3 Summary of Mendon's Stormwater Management Program under the 2003 Small MS4 General Permit**

Mendon's stormwater management program is managed within the Highway Department. Currently, stormwater management tasks are carried out by various Town departments and volunteer boards, including the Conservation Commission, Board of Health, and the Planning Board.

The Town of Mendon has achieved all measurable goals for the BMPs selected in the 2003 Notice of Intent. The following paragraphs include brief descriptions of current practices the Town undertakes as part of its Stormwater Management Program.

### **1.3.1 MCM 1 - Public Education and Outreach**

The Town has been able to provide a robust multi-media public education program related to nonpoint source pollution and stormwater management targeted at multiple audiences. The Town has achieved this by distributing educational and outreach materials to the general public and construction community, posting information on the Town's stormwater website, incorporating educational programs into the local school, and organizing the annual household hazardous waste day.

### **1.3.2 MCM 2 – Public Involvement and Participation**

Notice of public meetings complies with State and Local public meeting notice requirements and there are opportunities for residents of all ages to participate in Mendon's stormwater program and overall environmental stewardship. This includes Mendon's Roadway Clean-up Day, Household Hazardous Waste collection, storm drain stenciling and annual poster contest. Town staff and local citizen groups are also actively involved in monitoring the water quality of Mendon's surface waters through the Blackstone River Watershed Coalition "Adopt-a-Stream" and the "Stream Team" programs.

### **1.3.3 MCM 3 – Illicit Discharge and Detection Elimination**

Mendon has spent considerable effort on their IDDE Program. The Town has satisfied the mapping requirements of the 2003 General Permit and is well on the way to meeting the requirements in the 2016 Small MS4 General Permit. Mendon has completely mapped its entire MS4 system including outfalls, catch basins, drain manholes and all interconnected pipes in GIS, developed procedures for locating illicit discharges, and performed an outfall inventory and dry weather screening (sampled, mapped, and photographed) at all of their outfalls.

In 2009 Mendon adopted the *Non-Storm Water Discharge* bylaw, which regulates illicit discharges and illegal connections to the MS4. The Highway Department serves as the enforcement agency.

Town Staff have been trained, and are provided regular training opportunities, on illicit discharges and stormwater outfall investigations and sampling. Town staff look for the presence of illicit discharges during regular DPW operations activities.

### **1.3.4 MCM 4 – Construction Site Stormwater Runoff Control and MCM 5 – Post-Construction Stormwater Management**

Mendon adopted the *Stormwater Management Bylaw* in 2011. The Bylaw requires that all activities that result in disturbance of greater than one acre of land that drains to the municipal storm drain system or to a public way within the Town of Mendon must obtain a stormwater permit, meet performance standards, and develop an erosion and sediment control plan consistent with EPA's Construction General Permit Stormwater Pollution Prevention Plan (SWPPP).

In addition, the Town of Mendon has also adopted regulations that address construction site runoff issues covering the majority of development projects through the Site Plan Review Process, Subdivision Regulations and Wetland Bylaws. Site plan reviews are established and enforced, and reviews and inspections by the DPW, Planning Board, Building Inspector, and Conservation Commission are conducted. Town Departments including the Highway Department, Board of Health, Conservation Commission, and Planning Board review proposed developments and perform inspections during construction to ensure erosion controls are in place. Projects are not released until the site is clean and the stormwater system is functioning as designed.

The Town also implements post-construction best management practices (BMPs) maintenance based on the *Stormwater Management Bylaw*. In addition, the Town regulates post-construction site runoff from new and redevelopment through Subdivision Rules and Regulations and Wetlands Bylaws.

### **1.3.5 MCM 6 – Pollution Prevention and Good Housekeeping**

The Town implements Good Housekeeping Standard Operating Procedures and employee training for numerous actions to reduce pollutant runoff from municipal operations, including catch basin cleaning, street sweeping, staff training, storing oil and hazardous materials properly, covering winter deicing materials, vehicle washing and maintenance, park and landscape maintenance, culverts and outfall cleaning, and implementing a Good Housekeeping Plan, Highway Garage and Town Recycling Area Stormwater Pollution Prevention Plan (SWPPP), and an Oil Spill Prevention, Control, and Countermeasure (SPCC) Plan.

### **1.3.6 Additional Permit Requirements**

Groundwater Recharge and Infiltration: Through implementation of Non-Storm Water Discharge Bylaw, Wetlands Bylaw and Regulations, and Zoning Bylaws, the Town evaluates site conditions relative to stormwater infiltration.

Public Drinking Water Supply Requirements: The Town considers water supply sources and protection areas a priority for stormwater management, particularly IDDE activities.

Record Keeping: The Town of Mendon maintains stormwater management program records that are organized by year and are stored in both paper and digital format.

Water Quality Impaired Waters and Total Maximum Daily Load (TMDL) Allocations: Mendon's stormwater program is addressing many of the current requirements for discharges to impaired waterbodies. Through implementation of its current stormwater program, the Town is addressing the discharge of the pollutants of concern.

### 1.3.7 Building on 2003 BMPs

According to Section 1.10.b of the 2016 General Permit, Mendon must modify or update the BMPs being implemented under the 2003 General Permit to meet the terms and conditions of part 2.3 of the 2016 General Permit. Appendix B includes a list of BMPs completed under the 2003 Small MS4 General Permit and BMPs included in the Notice of Intent and SWMP which comply with the 2016 Small MS4 General Permit. This list identifies how the intent of each 2003 BMP is being met under the 2016 BMPs (further description of 2016 BMPs is included in Section 3 of this SWMP).

## 1.4 General Eligibility Determination

Section 1.2.1 of the Small MS4 General Permit authorizes the discharge of stormwater from small MS4s if the MS4 is determined to meet general eligibility criteria:

- *Small MS4 within the Commonwealth of Massachusetts*

The Town of Mendon is located within Worcester County, Massachusetts.

- *Not a large or medium MS4 as defined in 40 CFR 122.26(b)(4) or (7)*

The population of Mendon is approximately 5,840 according to the 2010 Census, the MS4 is not within a designated County, and the Town has not been designated by the Director as part of a large or medium MS4.

- *Located either fully or partially within an urbanized area as determined by the 2010 Census or located in a geographic area designated by EPA as requiring a permit*

Figure 1-2 shows the Regulated MS4 Areas for the Town of Mendon, based on 2000 and 2010 census listings. Mendon is partially urbanized.

## 1.5 Special Eligibility Determinations

### 1.5.1 Endangered Species

On behalf of the Town of Mendon, Tighe & Bond completed the National Endangered Species Eligibility Determination screening process in accordance with Part 1.9.1 and Appendix C of the Small MS4 General Permit, and determined that the Town of Mendon meets **Criterion C**, where it has been determined that the Town's stormwater discharges and discharge related activities will have "no affect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the US Fish and Wildlife Service. Refer to Appendix C of the SWMP for supporting information, including the US Fish and Wildlife Service IPaC Trust Resources Report for the project area and the Endangered Species Act Certification.

### 1.5.2 Historic Properties

On behalf of the Town of Mendon, Tighe & Bond completed the National Historic Preservation Act Eligibility Determination screening process in accordance with Part 1.9.2 and Appendix D of the Small MS4 General Permit and determined that the Town of Mendon meets **Criterion A**, as the discharges do not have the potential to cause effects on historic properties. Please refer to Appendix D of the SWMP for supporting information, including a list of the federal- and state-listed historic areas, buildings, burial grounds, objects, and structures in the Town of Mendon's regulated area downloaded from the Massachusetts Cultural Resource Information System (MACRIS).

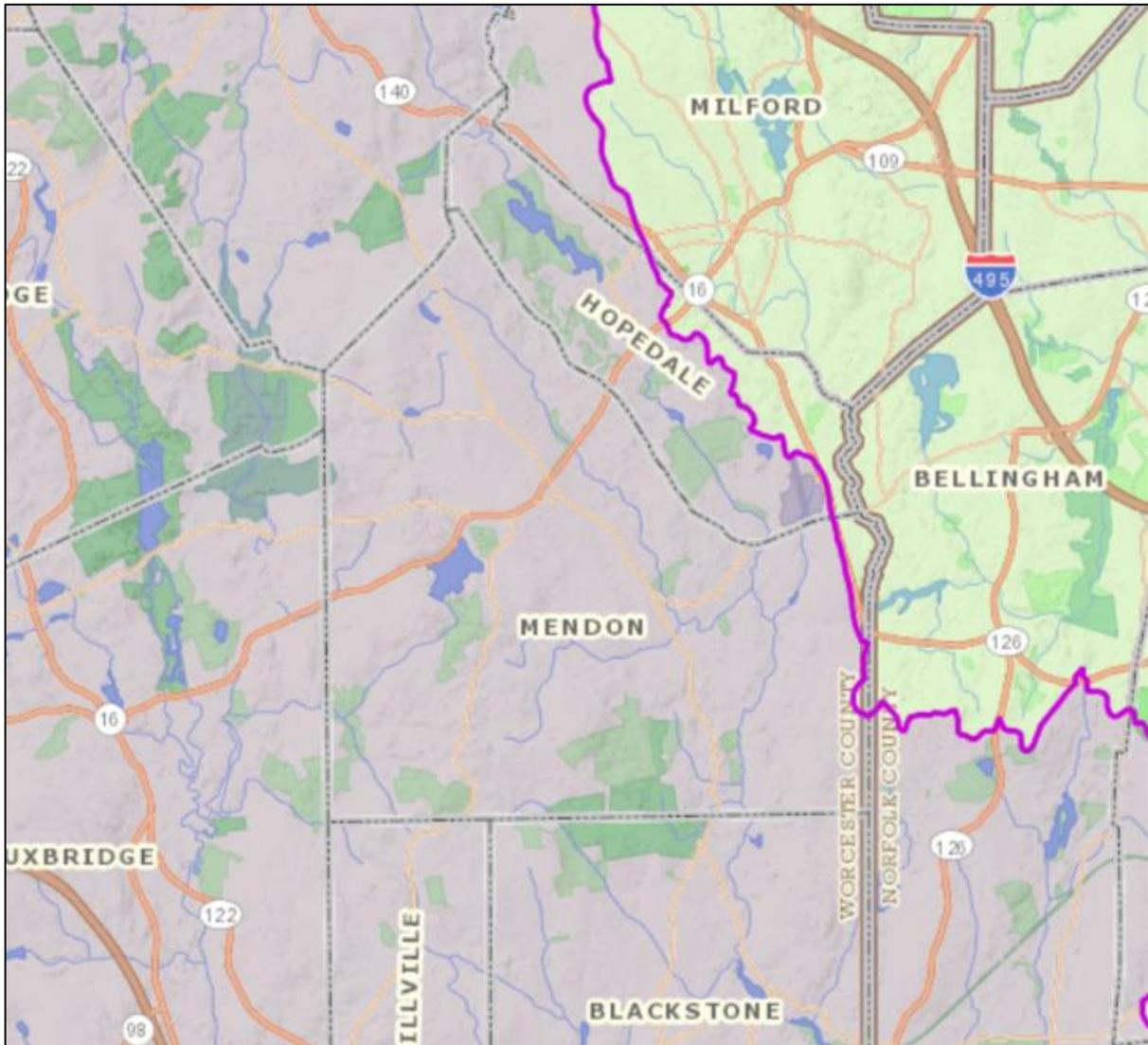
## **1.6 Authorization for Mendon to Discharge Stormwater**

A NOI must be submitted within 90 days of the effective date of the permit. A copy of the NOI is included in Appendix A. Documentation of the Town of Mendon's Authorization to Discharge by EPA will also be provided in Appendix A once issued by EPA. This written SWMP must be finalized within one year of the effective date of the permit.

## Section 2 Watershed Resources

### 2.1 Watershed Inventory

The Town of Mendon is located within the Charles River and the Blackstone River Watersheds, as shown in Figure 2-1.



**Figure 2-1** Major drainage areas in the Blackstone River (pink) and Charles River Watersheds (green)<sup>1</sup>

The majority of the Town of Mendon falls in the Blackstone River Watershed, which is located in south central Massachusetts and extends into Rhode Island to the Seekonk River and Narragansett Bay near Providence. The watershed is bordered by the Charles River Watershed to the east, the Ten Mile River watershed to the southeast and the Quinebaug River Watershed to the west. A small portion of eastern Mendon falls into the Charles River Watershed. The Charles River Watershed extends to Boston Harbor and is bordered by the Boston Harbor Watershed to the east and the Sudbury-Assabet-Concord (SuAsCo) Watershed to the west. Table 2-1 identifies the natural drainage basins within the Town of Mendon.

**Table 2-1**  
Natural Drainage Basins within the Town of Mendon, Massachusetts

Major Basin	Sub Basin	Watershed
Blackstone River Watershed	Hop Brook	12121
	Mill River	12120
	Muddy Brook	12114
	Nipmuck Pond	12094
	Ohio Brook	12112
	Rock Meadow Brook	12093
	Round Meadow Brook	12117
	Miscoe Brook	12090
	Hopedale Pond	12111
	Spindleville Pond	12116
Charles River Watershed	Charles River	20008

## 2.2 Water Quality

To meet the requirements of the Clean Water Act (CWA) Section 303(d), Massachusetts must assess and categorize surface waterbodies for attainment of designated uses (such as habitat for aquatic wildlife, aquatic wildlife consumption, and primary and secondary recreation), as well as identify any waterbodies that are not expected to meet surface water quality standards after implementation of controls. These sources are prioritized for establishing TMDLs for use in permit setting. Massachusetts meets the CWA reporting requirements through the development of an Integrated List of Waters, in which waters in the Commonwealth are categorized for attainment of designated uses. The Integrated List assigns each waterbody or waterway with one of five categories:

- **Category 1:** waters that are unimpaired and not threatened for all designated uses
- **Category 2:** waters that are unimpaired for some uses and not assessed for others

- **Category 3:** waters with insufficient information to make assessments for any uses
- **Category 4a:** waters with a completed TMDL
- **Category 4c:** waters that are impaired or threatened for one or more uses, but not by a pollutant and therefore not requiring the calculation of a TMDL
- **Category 5:** waters that are impaired or threatened for one or more uses and requiring a TMDL

Waterbodies classified as Category 4a (waterbodies with a TMDL) and Category 5 (“water quality limited” waterbodies) do not meet CWA designated uses, and stormwater pollutants of concern will need to be addressed per General Permit requirements.

Water quality within the Charles River Watershed and Blackstone River Watershed was assessed by the Massachusetts Department of Environmental Protection, Division of Watershed Management in 2006<sup>3</sup> and 2007<sup>4</sup>, respectively. See the applicable MassDEP reports for further information.

### 2.2.1 2018 Integrated List of Waters

As of the date of this SWMP update, Massachusetts waters categorized as impaired surface waters were identified in the Final Massachusetts Year 2018-2022 Integrated List of Waters.<sup>5</sup> Waterbodies identified on Integrated List within Mendon are listed in Table 2-2.

**Table 2-2**

Summary of 2018 Integrated List of Waters - Status of Mendon’s Receiving Waters

Category 5: Water Requiring a TMDL					
Indicator contributing to impairment:	Mill River MA51-35	Mill River MA51-36	Rock Meadow Brook (MA72-21)	Charles River (MA72-03)	Muddy Brook (MA51-40)
Non-Native Aquatic Plants*	X	X			
Aquatic Plants (Macrophytes)*	X	X	X		
Total Phosphorus			X	X	
PCB in Fish Tissue	X				
Escherichia coli		X		X	X
Aquatic Macroinvertebrate Bioassessment*			X		
Excess Algal Growth*			X	X	
Metals	X				

<sup>3</sup> MassDEP, Division of Watershed Management, “Blackstone River Watersheds 2003-2007 Water Quality Assessment Report”.

<sup>4</sup> MassDEP, Division of Watershed Management, “Charles River Watershed 2002-2006 Water Quality Assessment Report”.

<sup>5</sup> MassDEP, Bureau of Water Resources “Final Massachusetts Year 2018-2022 Integrated List of Waters”. February 2022. Accessed online at: <https://www.mass.gov/lists/integrated-lists-of-waters-related-reports#final-2018/2020-integrated-list-of-waters->

**Table 2-2**

Summary of 2018 Integrated List of Waters - Status of Mendon's Receiving Waters

Indicator contributing to impairment:	Mill River MA51-35	Mill River MA51-36	Rock Meadow Brook (MA72-21)	Charles River (MA72-03)
Nutrient/Eutrophication Biological Indicators*			X	
Organic Enrichment (Sewage) Biological Indicators*				X
Dissolved Oxygen			X	X
DDT*				X
Other*	X	X		
<b>Category 3 Waters: no uses assessed</b>				
Nipmuck Pond MA51111				
<b>Category 2 Waters: attaining some uses; other uses not assessed</b>				
Uses attained:	Miscoe Brook MA51-37		Spring Brook MA51-25	
Aesthetic	X		X	
Fish, other Aquatic Life and Wildlife	X		X	
Primary Contact Recreation				
Secondary Contact Recreation				

\*TMDL not required (Non-pollutant)

**2.2.2 Pollutants of Concern**

Based on the 2018 Integrated List of Waters, the pollutant of concern for Mendon's impaired waters related to stormwater is bacteria. Phosphorus and metals are also pollutants of concern within the Blackstone River Watershed. More information about these pollutants and their potential sources are included in Appendix E.

**2.2.3 Applicable TMDLs**

The Mill River, Muddy Brook, Charles River and Rock Meadow Brook within the Town of Mendon are identified as Category 5 waters (impaired and requiring a TMDL), as described in Section 2.2.1.

Two final TMDLs are established for the Charles River that impact Mendon. The *Final Phosphorus TMDL for the Upper/Middle Charles River* (2011) and The *Final Pathogen TMDL for the Charles River Watershed* (2007) apply to all Towns with the Upper and Middle Watershed and entire Watershed, respectively.

Based on **Section 2.2, Discharges to Certain Impaired Waters**, of the General Permit has identified Mendon as needing to meet requirements to address the Charles River

Watershed phosphorus TMDL and TMDL for bacteria or pathogens. Mendon must also meet the requirements for the phosphorous and metals impairment in the Blackstone River.

# Section 3

## Best Management Practices (BMPs) to Address Minimum Control Measures (MCMs)

This section includes descriptions of each BMP included in Mendon’s NOI, an implementation plan, guidelines and resources, and lists of important documentation to best address the MCMs in the General Permit.

### 3.1 MCM 1: Public Education and Outreach

**Objective:** *The permittee shall implement an education program that includes educational goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that pollutants in stormwater are reduced.*

This section of the SWMP describes how to comply with the Public Education and Outreach requirements in General Permit Section 2.3.2.

#### 3.1.1 MCM 1 BMPs from NOI

BMP ID	BMP Media/Category	BMP Description	Targeted Audience	Responsible Department/Parties	Measurable Goal	Beginning Year of BMP Implementation
1A	Multi-media methods (including social media and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including proper pet waste management, proper maintenance of septic systems. Educational topics will include but are not limited to those in Part 2.3.2.d.i	Residents	Planning/Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2019 (PY1)

**Section 3 Best Management Practices (BMPs) to Address  
Minimum Control Measures (MCMs)**

<b>BMP ID</b>	<b>BMP Media/ Category</b>	<b>BMP Description</b>	<b>Targeted Audience</b>	<b>Responsible Department/ Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
1B	Multi-media methods (including web and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including impaired waterbodies. Educational topics will include but are not limited to those in Part 2.3.2.d.ii	Businesses, Institutions, and Commercial Facilities	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2020 (PY2)
1C	Multi-media methods (including web and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including impaired waterbodies. Educational topics will include but are not limited to those in Part 2.3.2.d.iii	Developers (Construction)	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2019(PY1)
1D	Multi-media methods (including web and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including impaired waterbodies. Educational topics will include but are not limited to those in Part 2.3.2.d.iv	Industrial Facilities	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2020 (PY2)
1E	Public Education Goals and Progress	Educational goals (programmatic and message specific) will be defined in the SWMP.	All	Planning/ Conservation	Annually report methods/measures to evaluate effectiveness and progress to meet meeting goals.	FY 2019 (PY1)

**3.1.2 MCM 1 Implementation Plan**

**BMP 1A Education and Outreach to Residents**

Education and outreach goals for BMP 1A include:

- Increasing awareness of the impact of human activities on stormwater runoff and water quality;
- Changing residential behavior over time; and
- Reaching broad audiences with information that appeals to a diverse public.

Mendon will provide educational materials and general outreach to residents for stormwater management topics relevant to the Town. Topics may include:

- information about Mendon's impaired waterbodies;
- effects of outdoor activities such as lawn care on water quality (use of pesticides, herbicides, and fertilizers);
- benefits of appropriate on-site infiltration of stormwater;
- effects of automotive work and car washing on water quality;
- proper disposal of swimming pool water; and
- proper management of pet waste.

The Town will build upon the existing public education and outreach program to disseminate educational materials to residents via the internet, email, direct mailing, local cable channel, and/or public posting. The Town may choose to coordinate public educational strategies with local watershed groups and will take advantage of existing materials wherever possible. Section 3.1.5 includes free resources the Town can take advantage of to supplement the program.

#### BMP 1B Education and Outreach to Businesses, Institutions, and Commercial Facilities

Education and outreach goals for BMP 1B include:

- Increasing awareness of business practices that may contribute to stormwater pollution;
- Changing behavior over time; and
- Improving compliance with local code.

Mendon will provide educational materials and general outreach to businesses, institutions, and commercial facilities within Town for stormwater management topics relevant to Mendon. Topics may include:

- information about Mendon's impaired waterbodies;
- proper lawn maintenance (use of pesticides, herbicides and fertilizer);
- benefits of appropriate on-site infiltration of stormwater;
- building maintenance (use of detergents);
- minimizing the use of salt or other de-icing and anti-icing materials;
- proper storage of salt or other de-icing/anti-icing materials (cover/prevent runoff to storm system and contamination to groundwater);
- proper storage of materials (emphasize pollution prevention);

- proper management of waste materials and dumpsters (cover and pollution prevention);
- proper management of parking lot surfaces (sweeping);
- proper car care activities (washing of vehicles and maintenance); and
- proper disposal of swimming pool water by entities such as motels, hotels, and health and country clubs (discharges must be dechlorinated and otherwise free from pollutants).

The Town will build upon the existing public education and outreach program to disseminate educational materials to businesses, institutions, and commercial facilities within Town via the internet, email, direct mailing, local cable channel, and/or public posting. The Town may choose to coordinate public educational strategies with local watershed groups and will take advantage of existing materials wherever possible. Section 3.1.5 includes free resources the Town can take advantage of to supplement the program.

BMP 1C Education and Outreach to Developers

Education and outreach goals for BMP 1C include:

- Increasing awareness of the impact of construction activities on stormwater runoff and water quality;
- Changing developer behavior over time; and
- Improving compliance with local code.

Mendon will provide educational materials and general outreach to developers for stormwater management topics relevant to Mendon. Topics may include:

- information about Mendon's impaired waterbodies;
- 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).

The Town will build upon the existing public education and outreach program to disseminate educational materials to developers via the internet, email, direct mailing, local cable channel, and/or public posting. The Town may choose to coordinate public educational strategies with local watershed groups and will take advantage of existing materials wherever possible. Section 3.1.5 includes free resources the Town can take advantage of to supplement the program.

BMP 1D Education and Outreach to Industrial Facilities

Education and outreach goals for BMP 1D include:

- Increasing awareness of industrial activities that may contribute to stormwater pollution;
- Changing behavior over time; and
- Improving compliance with local code.

Mendon will provide educational materials and general outreach to industrial facilities within Town for stormwater management topics relevant to Mendon. Topics may include:

- information about Mendon’s impaired waterbodies;
- equipment inspection and maintenance;
- proper storage of industrial materials (emphasize pollution prevention);
- proper management and disposal of wastes;
- proper management of dumpsters;
- minimization of use of salt or other de-icing/anti-icing materials;
- proper storage of salt or other de-icing/anti-icing materials (cover/prevent runoff to storm system and groundwater contamination);
- benefits of appropriate on-site infiltration of stormwater runoff from areas with low exposure to industrial materials such as roofs or employee parking;
- proper maintenance of parking lot surfaces (sweeping); and
- requirements for coverage under EPA’s Multi-Sector General Permit (MSGP).

The Town will build upon the existing public education and outreach program to disseminate educational materials to industrial facilities within Town via the internet, email, direct mailing, local cable channel, and/or public posting. The Town may choose to coordinate public educational strategies with local watershed groups, such as the Blackstone River Coalition or Blackstone River Watershed Association and will take advantage of existing materials wherever possible. Section 3.1.5 includes free resources the Town can take advantage of to supplement the program.

**3.1.3 MCM 1 Implementation Schedule**

Outreach Method	PY1	PY2	PY3	PY4	PY5
Social Media	[Solid Blue Bar]				
Signage and brochures	[Solid Blue Bar]				
Direct mailing					
Direct mailing					
Direct mailing					
Direct mailing					
Survey					

	Residents
	Businesses, Institutions, and Commercial Facilities
	Developers
	Industrial Facilities
	All Audiences

### **3.1.4 Public Education and Outreach Goals and Progress**

Per Section 2.3.2.e of the General Permit, the public education and outreach program shall provide focused messages for specific audiences and show evidence that progress toward the goals of the program have been achieved. The following methods will be used by the Town to evaluate the effectiveness of the educational messages and overall education program:

- Quantify the number of each audience that is reached during direct mailings, by social media and through visiting the Town's stormwater page
- Develop survey for each audience and distribute in Permit Year 1, Permit Year 3, and Permit Year 5 to determine whether there has been a change in knowledge or behavior
- Track changes in behavior for specific issues addressed with education throughout the permit term (e.g., issues with erosion/sediment control during construction, pet waste bags found in catch basins, etc.)

The above methods used to evaluate the effectiveness of the program, and any additional methods developed after the date of this SWMP, shall be tied to the defined goals of the program and the overall objective of **changes in behavior and knowledge**.

### **3.1.5 MCM 1 Guidelines and Resources**

The following links include free or low-cost resources Mendon can use to supplement the Public Education program.

**EPA Public Education**

<https://cfpub.epa.gov/npstbx/>

**EPA Stormwater Management Program Resources – Public Education**

<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#peo>

**EPA Stormwater Education Toolkit (SET)**

<http://www.stormwater.ucf.edu/toolkit/>

**EPA National Menu of BMPs for Stormwater**

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu>

**MassDEP Public Education**

<https://www.mass.gov/guides/stormwater-outreach-materials-to-help-towns-comply-with-the-ms4-permit>

**Developing an Effective Stormwater Education and Outreach Program for Your Community**

[http://www.urbanwaterslearningnetwork.org/wp-content/uploads/2016/04/Manual-Stormwater-Education-and-Outreach\\_2014.pdf](http://www.urbanwaterslearningnetwork.org/wp-content/uploads/2016/04/Manual-Stormwater-Education-and-Outreach_2014.pdf)

**Urban Waters**

<http://www.nmstormwater.org/for-municipalities>

**Central Massachusetts Regional Stormwater Coalition (CMRSWC)**

<http://www.centralmastormwater.org>

**A Homeowner’s Guide to Protecting Water Quality in the Blackstone River Watershed**

[http://www.thebrwa.org/documents/guides/Homeowner\\_Guide.pdf](http://www.thebrwa.org/documents/guides/Homeowner_Guide.pdf)

**3.1.6 MCM 1 Checklist of Key Documentation**

Documentation of BMP progress should be kept in Appendix F. The following checklist includes the required documentation for MCM 1. See Section 5 of this Plan for additional record keeping information.

- All educational materials provided to target audiences
- Distribution lists for target audiences
- Dates of distribution of educational materials
- Annually track changes in social media subscription and use
- Note educational goals and opinion on effectiveness based on results tracked; modify education and outreach program if necessary

## 3.2 MCM 2: Public Involvement and Participation

**Objective:** *The permittee shall provide opportunities to engage the public to participate in the review and implementation of the SWMP.*

This section of the SWMP describes how to comply with the Public Involvement and Participation requirements in General Permit Section 2.3.3.

### 3.2.1 MCM 2 BMPs from NOI

BMP ID	BMP Category	BMP Description	Responsible Department/ Parties	Measurable Goal	Beginning Year of BMP Implementation
2A	Public Review	SWMP Review	Planning/ Conservation	Annually provide the public with an opportunity to participate in the review and implementation of the SWMP	FY 2019 (PY1)
2B	Public Participation	Provide opportunities for public involvement and participation in Mendon's stormwater program. Specific activities, schedule, and lead departments are included in the SWMP.	Planning/ Conservation	Ongoing compliance	FY 2019 (PY1)
2C	Public Review	Stormwater Management Task Force (Town Administrator, Highway Dept, Conservation Commission, Planning, Board of Health, Parks and Recreation, Police Dept, Fire Dept, Sustainability Committee)	Planning/ Conservation	At a minimum, Stormwater Management Task Force will meet annually.	FY 2019 (PY1)

**3.2.2 MCM 2 Implementation Plan**

BMP 2A Stormwater Management Plan Public Review

Mendon shall provide the public with an opportunity to review this Stormwater Management Plan prior to finalizing it, and with other opportunities to participate in the Town’s Stormwater Program on an annual basis.

While the Planning Board and Conservation Commission are the responsible parties for this BMP, multiple Town Departments can help aid in successful implementation, as public participation in stormwater management initiatives often crosses Departments.

BMP 2B Public Participation in Stormwater Management Program

Public involvement and participation goals for BMP 2B include:

- Increasing public involvement in and knowledge of Mendon’s stormwater program; and
- Improving water quality through local clean up and waste collection events.

Mendon shall continue to provide notice for public meetings per Massachusetts General Law requirements, including meetings pertaining to the Stormwater Management Program.

The Town shall continue to provide annual opportunities for public participation in the Program. These opportunities may include, but are not limited to:

- Storm drain stenciling;
- Roadway Clean Up Day
- Hazardous waste collection day;

Appendix E includes a document with helpful tips for organizing and conducting volunteer clean-up events that Mendon may reference. The Town shall document all public participation activities in the Annual Reports, and documentation should seek to quantify results or impact to better evaluate the public involvement and participation program effectiveness.

BMP 2C Stormwater Management Task Force

The Town has implemented a Stormwater Management Task Force, which meets on an as-needed basis. The Committee will continue to meet annually and/or as needed during the Permit term.

**3.2.3 MCM 2 Implementation Schedule**

BMP	PY1	PY2	PY3	PY4	PY5
2A Stormwater Management Plan Public Review	●	●	●	●	●
2B Public Participation in Stormwater Management Program	←————→				
2C Stormwater Management Task Force	●	●	●	●	●

● = annual requirement  
 ←————→ = ongoing requirement

### **3.2.4 MCM 2 Guidelines and Resources**

The following links include free or low-cost resources Mendon can use to supplement the Public Involvement program.

**EPA National Menu of BMPs for Stormwater**

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#inv>

**EPA Evaluation of the Role of Public Outreach and Stakeholder Engagement in Stormwater Funding Decisions in New England: Lessons from Communities**

<https://www.epa.gov/sites/production/files/2015-09/documents/eval-sw-funding-new-england.pdf>

**Manchester Urban Ponds Restoration Program: Tips for Organizing and Conducting Volunteer Clean-up Events**

Available in Appendix E of this SWMP

**Massachusetts Open Meeting Law Guide**

<http://www.mass.gov/ago/docs/government/oml/oml-guide.pdf>

### **3.2.5 MCM 2 Checklist of Key Documentation**

Documentation of BMP progress should be kept in Appendix F. The following checklist includes the required documentation for MCM 2. See Section 5 of this Plan for additional record keeping information.

- Public meeting dates and topics when stormwater management-related topic is discussed
- Dates of public participation activities and quantification of participation (such as number of volunteers/participants, number of bags collected, etc.)
- Meeting dates, topics, and attendees for Stormwater Management Task Force meetings

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

**Objective:** *The permittee shall implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges.*

This section of the SWMP describes how to comply with the Illicit Discharge Detection and Elimination Program requirements in General Permit Section 2.3.4.

**3.3.1 MCM 3 BMPs from NOI<sup>6</sup>**

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department/ Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
3A	IDDE Ordinance/Bylaw	Complete. Continue to enforce and update if necessary.	Highway Dept./ Health	Track illicit discharges identified and removed. Track permits issues with certification of no illicit connections.	FY 2019 (PY1)
3B	Storm sewer system map	Mapping Completed with Pipes, Catch basins and Outfalls.	Highway Dept.	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	FY 2019 (PY1)
3C	Written IDDE program	Create written IDDE program	Highway Dept. / Health	Complete within 1 year of the effective date of permit and update as required	FY 2019 (PY1)
3D	Assessment and Priority Ranking of Outfalls & Interconnections	1. Completed Initial Catchment Delineation and Priority Ranking as part of BMP 3D for outfalls in the urbanized area.	Highway Dept.	Complete within 1 year of the effective date of permit and update as necessary	FY 2019 (PY1)
3D	Assessment and Priority Ranking of Outfalls & Interconnections	2. Completed Dry Weather Outfall Screening & Sampling in accordance with IDDE Plan and permit conditions for all outfalls with dry weather flow	Highway Dept.	Complete 3 years after effective date of permit. Track # illicit discharges identified & volume removed. Summarize screening/sampling results.	FY 2019 (PY1)
3D	Assessment and Priority Ranking of Outfalls & Interconnections	3. Catchment Investigations according to program and permit conditions	Highway Dept.	Complete 10 years after effective date of permit. Track # and percentage of MS4 catchments evaluated. Track # illicit discharges identified & volume removed. Summarize screening/sampling results.	FY 2020 (PY2)

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department/ Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
3E	Employee Training	Train employees on IDDE implementation	Highway Dept.	Train annually. Track employees trained, training topic, date/time, and materials presented.	FY 2019 (PY1)

**3.3.2 MCM 3 Implementation Plan**

A very basic written Illicit Discharge Detection and Elimination Plan was developed for the Town of Mendon, in 2009. The Town will need to update this Plan to complete the IDDE program in conformance with the requirements of MCM 3. This SWMP section presents a brief summary of the information presented in the current IDDE Plan.

BMP 3A IDDE Bylaw

The IDDE program shall include adequate legal authority to prohibit, investigate, and eliminate illicit discharges and implement enforcement procedures and actions. Mendon has met this requirement by adopting a bylaw entitled *Chapter XXIII: Non-Storm Water Discharge* on May 2009. This bylaw prohibits illicit discharges and sanitary sewer overflows (SSOs) to the Town’s drainage system. The Highway Department serves as the enforcement agency for the bylaw.

BMP 3A is complete.

BMP 3B Storm Sewer System Map

A comprehensive map of Mendon’s drainage system has been developed, and the Town has met the requirements of this BMP. Town staff should continue to update the map as necessary to reflect newly discovered information, corrections or modifications, improved connectivity, and progress made.

BMP 3B is ongoing.

BMP 3C Written IDDE Program

Mendon has drafted a town-wide IDDE Plan, which needs to be updated in accordance with the final General Permit.

BMP 3C is ongoing.

BMP 3D.1 Outfall/Interconnection Inventory and Initial Ranking

The Town conducted dry weather sampling of all outfalls in 2013 and will continue to screen outfalls for interconnections and priority rank each outfall within the MS4 in terms of their potential to have illicit discharges and SSOs, and the related public health significance.

BMP 3D.1 is ongoing.

BMP 3D.2 Dry Weather Outfall/Interconnection Screening and Sampling

Field investigations must be completed during dry weather conditions to confirm whether any Low or High Priority outfalls have dry weather flow, which may be indicative of illicit connections/discharges. The initial catchment delineation and priority ranking must be updated by the end of Permit Year 3 based on the data gathered in the field. All data gathered during implementation of this BMP must be reported annually.

BMP 3D.2 is ongoing.

BMP 3D.3 Outfall/Interconnection Catchment Investigations

Each catchment associated with an outfall or interconnection within the MS4 must be investigated based on identified System Vulnerability Factors (SVF, i.e., the likelihood that illicit discharges/connections exist) in that particular area. For all catchments, key junction manholes shall be opened and inspected for evidence of illicit connections during dry weather conditions. For catchments with one or more SVF, wet weather monitoring must be completed. The Town will identify the number of outfall catchments in the MS4 that have been evaluated using the catchment investigation procedure developed under BMP 3D. All data gathered during implementation of this BMP must be reported annually.

At the conclusion of field work for this BMP, the outfall/interconnection inventory should be updated and reprioritized for ongoing screening once every five years.

BMP 3E Employee Training

Employees involved in the IDDE Program must be trained annually on the Program, including how to recognize illicit discharges and SSOs in accordance with the IDDE Plan.

**3.3.3 MCM 3 Implementation Schedule**

EPA’s implementation timeline for the IDDE Program is available in Appendix E.

BMP	PY1	PY2	PY3	PY4	PY5
3A IDDE Bylaw	✓				
3C Storm Sewer System Map	←————●————→				
3D Written IDDE Program	●				
3E.1 Outfall/Interconnection Inventory and Initial Ranking	●				
3E.2 Dry Weather Screening and Sampling	✓				
3E.3 Catchment Investigations		←————→			
3F Employee Training	●	●	●	●	●

✓ = BMP complete  
 ● = annual requirement or year due  
 ←————→ = ongoing requirement

### **3.3.4 MCM 3 Guidelines and Resources**

The following links include free or low-cost resources Mendon can use to supplement the IDDE program. The Town-specific procedures in the IDDE Plan were developed using the IDDE Guidance Manual and New England Source Tracking Protocol linked below.

**Center for Watershed Protection Illicit Discharge Detection and Elimination:  
A Guidance Manual for Program Development and Technical Assessments**

[https://www3.epa.gov/npdes/pubs/idde\\_manualwithappendices.pdf](https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf)

**EPA Stormwater Management Program Resources – IDDE**

<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#idde>

**EPA New England Bacterial Source Tracking Protocol**

<https://www3.epa.gov/region1/npdes/stormwater/ma/2014AppendixI.pdf>

**EPA National Menu of BMPs for Stormwater**

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#ill>

**Mendon *Non-Storm Water Discharge* Bylaw**

[http://www.mendonma.gov/sites/mendonma/files/file/file/mendon\\_bylaws\\_8.8.18\\_update\\_0.pdf](http://www.mendonma.gov/sites/mendonma/files/file/file/mendon_bylaws_8.8.18_update_0.pdf)

### **3.3.5 MCM 3 Checklist of Key Documentation**

Documentation of BMP progress should be kept in Appendix F. The following checklist includes the required documentation for MCM 3. See Section 5 of this Plan for additional record keeping information.

- Log of phone calls and complaints received regarding suspected illicit connections and other storm drain issues, including dates and actions taken;
- ✓ Drainage system map;
- ✓ Data collected during dry and wet weather outfall/interconnection investigations, including the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening results, and results of all analyses (summarize on an annual basis and for the entire permit term);
- Number and percent of total outfall catchments served by the MS4 evaluated using the catchment investigation procedure;
- Presence or absence of System Vulnerability Factors for each catchment;
- Data collected during key junction manhole investigations;
- Inspection and maintenance records; and
- Frequency and type of employee training, including employees trained, training topic, date/time, and materials presented.

### 3.4 MCM 4: Construction Site Stormwater Runoff Control

**Objective:** *To minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S. through the permittee’s MS4.*

This section of the SWMP describes how to comply with the Construction Site Stormwater Runoff Control requirements in General Permit Section 2.3.5.

#### 3.4.1 MCM 4 BMPs from NOI

BMP ID	BMP Category	BMP Description	Responsible Department/ Parties	Measurable Goal	Beginning Year of BMP Implementation
4A	Construction Bylaw and Regulations	Modify local bylaw and regulations, if necessary, to contain new MS4 provisions per section 2.3.5.	Planning Board	Review current procedures and modify if necessary within 1 year of permit effective date	FY 2019 (PY1)
4B	Construction Policy and Procedures	Develop and implement written procedures for site inspections and enforcement procedures per section 2.3.5.	Planning Board	Review current procedures and modify if necessary within 1 year of permit effective date	FY 2019 (PY1)

#### 3.4.2 MCM 4 Implementation Plan

Per the General Permit, Mendon must develop and implement the following items, which will be adopted as either Bylaw/regulation modifications or a new policy or procedure:

- A regulatory mechanism that requires the use of sediment and erosion control practices at construction sites, as well as controls for other wastes on construction sites such as demolition debris, litter, and sanitary wastes;
- Written procedures for site inspections and enforcement of sediment and erosion control measures, including the responsible party for site inspections and enforcement authority, due within one (1) year of the effective date of the permit;
- 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;

- Requirements for construction site operators within the MS4 jurisdiction to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes; and
- Written procedures for site plan review and inspection and enforcement, due within one (1) year of the effective date of the permit.

BMP 4A Construction Bylaw and Regulations

The Town shall implement and enforce a program to reduce pollutants in stormwater runoff discharged to the municipal drainage system from construction activities, including use of sediment and erosion control practices, at sites greater than one acre. Mendon has met this requirement by adopting *Chapter XXXVI-A Stormwater Bylaw* in November 2010. This bylaw provides guidance for site planning and stormwater runoff control during construction and post-construction to protect local water resources from discharges. The Planning Board serves as the enforcement agency for the bylaw.

The Town will review the existing bylaw and regulations with respect to the 2016 General Permit and modify it if needed.

BMP 4B Construction Policy and Procedures

Mendon shall develop written procedures for site inspections and enforcement of sediment and erosion control measures. They will include procedures for tracking the number of site reviews, inspections, and enforcement actions.

**3.4.3 MCM 4 Implementation Schedule**

<b>BMP</b>	<b>PY1</b>	<b>PY2</b>	<b>PY3</b>	<b>PY4</b>	<b>PY5</b>
4A Construction Bylaw and Regulations	●				
4B Construction Policy and Procedures	●				

● = year due

**3.4.4 MCM 4 Guidelines and Resources**

The following links include free or low-cost resources Mendon can use to supplement the Construction program.

**EPA Construction General Permit SWPPP template, including inspection forms**

<https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents>

**Massachusetts Stormwater Handbook**

<https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards>

**EPA Stormwater Management Program Resources – Construction Site Runoff Control**

<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#csrc>

**EPA National Menu of BMPs for Stormwater**

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#constr>

**Mendon Stormwater Management Bylaw**

[http://www.mendonma.gov/sites/mendonma/files/file/file/mendon\\_bylaws\\_8.8.18\\_update\\_0.pdf](http://www.mendonma.gov/sites/mendonma/files/file/file/mendon_bylaws_8.8.18_update_0.pdf)

**Central Massachusetts Regional Stormwater Coalition SOP 5: Construction Site Inspection**

[http://www.centralmastormwater.org/Pages/csrc\\_toolbox/Construction%20Inspection%20SOP\\_FINAL.pdf](http://www.centralmastormwater.org/Pages/csrc_toolbox/Construction%20Inspection%20SOP_FINAL.pdf)

**Central Massachusetts Regional Stormwater Coalition SOP 6: Erosion and Sedimentation Control**

[http://www.centralmastormwater.org/Pages/csrc\\_toolbox/Erosion%20and%20Sedimentation%20Control%20SOP\\_FINAL.pdf](http://www.centralmastormwater.org/Pages/csrc_toolbox/Erosion%20and%20Sedimentation%20Control%20SOP_FINAL.pdf)

### **3.4.5 MCM 4 Checklist of Key Documentation**

Documentation of BMP progress should be kept in Appendix F. The following checklist includes the required documentation for MCM 4. See Section 5 of this Plan for additional record keeping information.

- Number of site reviews, inspections, and enforcement actions; and
- Modifications to Mendon’s bylaws, regulations, policies, and/or procedures as necessary.

## **3.5 MCM 5: Post-Construction Stormwater Management**

**Objective:** *Reduce the discharge of pollutants found in stormwater through the retention or treatment of stormwater after construction on new or redeveloped sites.*

This section of the SWMP describes how to comply with the Stormwater Management in New Development and Redevelopment requirements in General Permit Section 2.3.6.

**3.5.1 MCM 5 BMPs from NOI**

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department/ Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
5A	Post-Construction Bylaw and Regulations	Modify local bylaw and regulations to contain new MS4 provisions per section 2.3.6.a.	Planning Board	Modify existing bylaw and regulations within two (2) years of permit effective date	FY 2020 (PY 1 / 2)
5B	Assess street 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	Complete report no later than (4) years of permit effective date	FY 2021 (PY3)
5C	Assess allowing 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	Complete report no later than (4) years of permit effective date	FY 2021 (PY3)
5D	Retrofit Feasibility Assessment	Detailed inventory of Town-owned properties is complete. Rank Town-owned properties for retrofit potential.	Planning Board	Complete report no later than 4 years of permit effective date, beginning in year 5 keep running list of at least 5 retrofit sites	FY 2021 (PY3)

**3.5.2 MCM 5 Implementation Plan**

BMP 5A Post-Construction Bylaw and Regulations

The Town shall implement and enforce a program to reduce pollutants in stormwater runoff discharged to the municipal drainage system from post-construction activities for all new development and redevelopment sites greater than one acre. Mendon has met this requirement by adopting a bylaw entitled *Chapter XXVI-A Stormwater Management Bylaw*

in November 2010. This bylaw provides guidance for site planning and stormwater runoff control during construction and post-construction to protect local water resources from discharges. The Planning Board serves as the enforcement agency for the bylaw.

Additionally, the Town must have procedures in place to require the submission of as-built plans after the completion of construction projects and ensure long-term operation and maintenance of stormwater management practices in place at construction sites.

The Town has already met many of these requirements through the *Stormwater Management Bylaw* and the *Non-Storm Water Discharge Bylaw*. The bylaws will be revised to fully comply with the 2016 General Permit.

BMP 5B Assess Street and Parking Lot Guidelines

In accordance with General Permit Section 2.3.6.b, Mendon shall develop a report assessing current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover. This assessment shall be used to provide information to allow the Town to determine if changes to design standards for streets and parking lots can be made to support low impact design (LID) options. Input will be gathered from multiple Town departments. The final report will be appended to this SWMP once completed.

BMP 5C Assess Feasibility of Allowing Green Infrastructure

As detailed in General Permit Section 2.3.6.c, Mendon shall develop a report assessing local regulations to determine the feasibility of making green roofs, infiltration practices, and water harvesting devices allowable when appropriate site conditions exist. The Town shall implement all recommendations in accordance with the schedules contained in the assessment.

BMP 5D Retrofit Feasibility Assessment

The Town must identify at least five town-owned properties that could potentially be modified or retrofitted with BMPs designed to reduce the frequency, volume, and pollutant loads of stormwater discharges through a reduction of impervious area. General Permit Section 2.3.6.d describes factors and considerations for selecting potential sites with the goal of reducing impervious area and improving water quality. The inventory must be updated annually starting in Permit Year 5.

**3.5.3 MCM 5 Implementation Schedule**

BMP	PY1	PY2	PY3	PY4	PY5
5A Post-Construction Bylaw and Regulations		●			
5B Assess Street and Parking Lot Guidelines				●	
5C Assess Feasibility of Allowing Green Infrastructure				●	
5D Retrofit Feasibility Assessment				●	→

● = year due

### **3.5.4 MCM 5 Guidelines and Resources**

The following links include free or low-cost resources Mendon can use to supplement the Post-Construction program.

**Massachusetts Stormwater Handbook**

<https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards>

**EPA Stormwater Management Program Resources – Post Construction Stormwater Control**

<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#pcsm>

**EPA National Menu of BMPs for Stormwater**

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#post>

**Mendon Stormwater Management Bylaw**

[http://www.mendonma.gov/sites/mendonma/files/file/file/mendon\\_bylaws\\_8.8.18\\_update\\_0.pdf](http://www.mendonma.gov/sites/mendonma/files/file/file/mendon_bylaws_8.8.18_update_0.pdf)

**Managing Stormwater in Your Community: A Guide for Building an Effective Post-Construction Program**

<https://www3.epa.gov/npdes/pubs/stormwaterinthecommunity.pdf>

**EPA Managing Stormwater with LID Practices: Addressing Barriers to LID**

<https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/AddressingBarrier2LID.pdf>

**Metropolitan Area Planning Council LID Toolkit**

<https://www.mapc.org/resource-library/low-impact-development-toolkit/>

**Central Massachusetts Regional Stormwater Coalition SOP 5: Construction Site Inspection**

[http://www.centralmastormwater.org/Pages/crsc\\_toolbox/Construction%20Inspection%20SOP\\_FINAL.pdf](http://www.centralmastormwater.org/Pages/crsc_toolbox/Construction%20Inspection%20SOP_FINAL.pdf)

**Central Massachusetts Regional Stormwater Coalition SOP 6: Erosion and Sedimentation Control**

[http://www.centralmastormwater.org/Pages/crsc\\_toolbox/Erosion%20and%20Sedimentation%20Control%20SOP\\_FINAL.pdf](http://www.centralmastormwater.org/Pages/crsc_toolbox/Erosion%20and%20Sedimentation%20Control%20SOP_FINAL.pdf)

### **3.5.5 MCM 5 Checklist of Key Documentation**

Documentation of BMP progress should be kept in Appendix F. The following checklist includes the required documentation for MCM 5. See Section 5 of this Plan for additional record keeping information.

- Measures the Town has taken to ensure adequate long-term operation and maintenance of stormwater BMPs and to require submission of as-built plans;
- Modifications to Mendon’s bylaws, regulations, policies, and/or procedures as necessary;

- Status of BMP 5B and 5C assessments, including any planned or completed changes to local regulations and guidelines (BMP 5B) and findings and progress towards making the practices allowable (BMP 5C); and
- Retrofit inventory, including all sites that have been modified or retrofitted. Sites should include town-owned sites identified in the inventory as well as non-municipal property modified or retrofitted to mitigate impervious area.

### **3.6 MCM 6: Good Housekeeping and Pollution Prevention**

**Objective:** *The permittee shall implement an operations and maintenance program for permittee-owned operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned operations.*

This section of the SWMP describes how to comply with the Good Housekeeping and Pollution Prevention requirements in General Permit Section 2.3.7.

#### **3.6.1 MCM 6 BMPs from NOI**

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department/ Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
6A	Operation & Maintenance Program	Completed inventory of all permittee-owned <b>parks and open spaces, buildings and facilities</b> (including their storm drains), and <b>vehicles and equipment</b> . Create O&M procedures for all properties in the inventory.	Highway/Planning	Complete 2 years after permit effective date, implement in following years	FY 2019 (PY1)
6B	Operation & Maintenance Program	Establish and implement program for repair and rehabilitation of <b>MS4 infrastructure</b>	Highway Dept	Complete 2 years after permit effective date, implement in following years	FY 2019 (PY1)
6C	Stormwater Pollution Prevention Plans (SWPPP)	Maintain/implement previously developed SWPPP and SPCC BMPs at the highway garage.	Highway Dept	Complete SWPPPs within 2 year of permit effective date, implement in following years	FY 2020 (PY2)

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department/ Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
6D	Operation & Maintenance Program	1. Implement procedures to optimize catch basin cleaning developed under BMP 6B	Highway Dept.	Track frequency and material quantity of catch basin cleaning in town.  In first Annual Report and in SWMP, document plan for optimizing catch basin cleaning.	FY 2019 (PY1)
6D	Operation & Maintenance Program	2. Implement procedures for street and parking lot sweeping developed under BMP 6B	Highway Dept.	Annually track number of miles cleaned or the volume or mass of material removed.	FY 2019 (PY1)
6D	Operation & Maintenance Program	3. Implement procedures for use and storage of deicing materials developed under BMP 6B	Highway Dept.	Implement program for winter road maintenance throughout permit term.	FY 2019 (PY1)
6D	Operation & Maintenance Program	4. Implement procedures to inspect and maintain Town-owned structural stormwater BMPs	Highway Dept.	Develop an inventory of Town owned-BMPs during PY3. Report on inspection and maintenance conducted annually starting in PY4.	FY 2019 (PY1)

**3.6.2 MCM 6 Implementation Plan**

BMP 6A Operation and Maintenance Program for Municipal Facilities and Equipment

Mendon must develop a written Town-Wide Operation and Maintenance Program for municipal facilities and equipment, including:

- Parks and open space;
- Buildings and facilities, including schools, where pollutants are exposed to stormwater runoff; and
- Vehicles and equipment.

The Town has developed an inventory of the municipally-owned facilities and equipment. The inventory will be appended to this SWMP.

#### BMP 6B Operation and Maintenance Program for MS4 Infrastructure

The Town will include MS4 Infrastructure Town-Wide Operation & Maintenance in the plan described in BMP 6A. This section of the plan will describe the activities and procedures used to maintain MS4 infrastructure in a timely manner to reduce the discharge of pollutants from the MS4.

#### BMP 6C Stormwater Pollution Prevention Plans

The Town has prepared and is implementing a SWPPP for the Town's Highway Garage and Town Recycling Area. SWPPP requirements include "regular" employee training for all members of the Pollution Prevention Team (at a minimum). Additionally, quarterly site inspections are required at these sites according to General Permit Section 2.3.7.b.iii.

#### BMP 6D.1 Catch Basin Cleaning

The Town must clean and inspect catch basins to make sure that catch basins are no more than 50% full. Develop and implement a program to optimize routine inspections, cleaning, and maintenance of catch basins. If a catch basin is consistently less than 50% full, the Town can reduce the frequency of cleanings. If a catch basin is more than 50% full during two consecutive cleanings/inspections, the Town must investigate the contributing drainage area for sources of excessive sediment loading abate contributing sources when possible. Store and dispose/reuse catch basin cleanings according to MassDEP policies.

#### BMP 6D.2 Street Sweeping

Establish and implement procedures for sweeping and/or cleaning streets and Town-owned parking lots. All streets must be swept and/or cleaned at least once per year in the spring (excluding rural streets with no curbs or catch basins). More frequent sweeping shall occur in targeted areas on the basis of pollutant load reduction potential. Store and dispose/reuse street sweepings according to MassDEP policies.

For rural streets with no curbs or catch basins, the Town must sweep at least once per year or develop a targeted inspection and sweeping plan for those streets.

#### BMP 6D.3 Deicing Materials

Establish and implement procedures for winter road maintenance, including the use and storage of salt and sand.

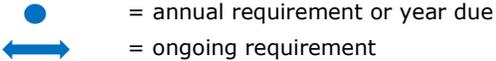
#### BMP 6D.4 Inspection and Maintenance of Town-Owned BMPs

The Town shall develop inspection and maintenance procedures and frequencies for all stormwater treatment structures. An important first step will be to improve the inventory, mapping, and record keeping procedures for Town-owned or operated stormwater BMPs,

such as detention ponds and swales. All town-owned BMPs must be inspected annually at a minimum.

**3.6.3 MCM 6 Implementation Schedule**

<b>BMP</b>	<b>PY1</b>	<b>PY2</b>	<b>PY3</b>	<b>PY4</b>	<b>PY5</b>
6A O&M Program for Municipal Facilities and Equipment		●			
6B O&M Program for MS4 Infrastructure		●			
6C Stormwater Pollution Prevention Plans		●			
6D.1 Catch Basin Cleaning	←	→			→
6D.2 Street Sweeping	←	●	→		
6D.3 Deicing Materials	←	→			→
6D.4 Inspection and Maintenance of Town-Owned BMPs	●	●	●	●	●


  
 ● = annual requirement or year due  
 ↔ = ongoing requirement

**3.6.4 MCM 6 Guidelines and Resources**

The following links include free or low-cost resources Mendon can use to supplement the Good Housekeeping and Pollution Prevention program. The Town should also refer to the Spill Prevention, Control and Countermeasure Plan.

**EPA Stormwater Management Program Resources – Good Housekeeping**

<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#gh>

**EPA National Menu of BMPs for Stormwater**

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#poll>

**Center for Watershed Protection Municipal Pollution Prevention/Good Housekeeping Practices**

[http://cdrpc.org/wp-content/uploads/2015/05/CWP\\_Municipal\\_Pollution\\_Prevention.pdf](http://cdrpc.org/wp-content/uploads/2015/05/CWP_Municipal_Pollution_Prevention.pdf)

**MassDEP Management of Catch Basin Cleanings**

<http://www.mass.gov/eea/agencies/massdep/recycle/regulations/management-of-catch-basin-cleanings.html>

**MassDEP Reuse & Disposal of Street Sweepings**

<http://www.mass.gov/eea/docs/dep/recycle/laws/stsweep.pdf>

**MassDEP Snow Disposal Guidance**

<https://www.mass.gov/guides/snow-disposal-guidance>

**Central Massachusetts Regional Stormwater Coalition SOP: Inspecting Constructed BMPs**

[http://centralmastormwater.org/Pages/crsc\\_toolbox/Constructed%20BMP%20Inspection%20SOP\\_FINAL.pdf](http://centralmastormwater.org/Pages/crsc_toolbox/Constructed%20BMP%20Inspection%20SOP_FINAL.pdf)

### **3.6.5 MCM 6 Checklist of Key Documentation**

Documentation of BMP progress should be kept in Appendix F. The following checklist includes the required documentation for MCM 6. See Section 5 of this Plan for additional record keeping information.

- Inventory of municipal facilities and equipment;
- Plan for optimizing catch basin cleaning and metrics about the number of catch basins, quantity cleaned and inspected, and total volume of material removed from all catch basins;
- Miles of streets cleaned and the volume of material removed; and
- All records associated with SWPPP quarterly site inspections, maintenance activities, and training.

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## Section 4

# BMPs to Address Specific Waterbody Requirements

### 4.1 Impaired Waterbodies

As described in Sections 2 of the SWMP, the Mill River, Rock Meadow Brook and Charles River were identified in the 2014 Integrated List of Waters as Category 5 waters needing a TMDL. Although these waterbodies are impaired for non-native aquatic plants, aquatic plants (macrophytes), PCB in Fish tissue, dissolved oxygen, aquatic macroinvertebrate bioassessment, excess algal growth, DDT and *E. coli*, among others, additional BMPs are required for only the bacterial impairment. The Town of Mendon has expanded BMP 1A to include outreach and education on proper pet waste management and maintenance of septic systems and will designate catchments draining to Mill River as High priority in the implementation of the IDDE program per the requirements of Appendix F.III.1.a. Additional requirements are needed for the Phosphorus and Bacteria TMDL within the Charles River Watershed and are described in Sections 4.2 and 4.3.

Additionally, phosphorus is a pollutant of concern within the Blackstone River Watershed. The Town of Mendon has enhanced BMPs for Public Education and Outreach BMPs, Stormwater Management in New Development and Redevelopment and Good Housekeeping, to comply with the requirements of Part II of Appendix H of the General Permit.

#### 4.1.1 Enhanced BMPs for Bacteria

##### General Permit Part 2.3.3: Public Education and Outreach

Mendon shall supplement the residential public education program with an annual message about the proper management of pet waste and maintenance of septic systems. Educational materials should also be provided to dog owners during issuance or renewal of dog licenses. All pet waste management educational materials should:

- Describe the detrimental impacts of improper management of pet waste;
- Include requirements for waste collection and disposal; and
- List the penalties for non-compliance.

All septic system maintenance educational materials should:

- Describe proper maintenance of septic systems in any catchment that discharges to the Mill River.

##### General Permit Part 2.3.4: Illicit Discharge Detection and Elimination Program

Catchments that drain to waterbodies impaired for bacteria or pathogens must be designated as "Problem" or "High Priority" catchments during implementation of the IDDE Program. This includes all outfalls discharging to Mill River in Mendon.

#### 4.1.2 Enhanced BMPs for Phosphorus

##### General Permit Part 2.3.2: Public Education and Outreach

Mendon shall supplement the residential and business/commercial/institution public education program with an annual message about various topics, including:

- Spring – the proper use and disposal of grass clippings and encouraging the proper use of slow-release and phosphorus-free fertilizers;
- Summer – the proper management of pet waste, including noting any existing bylaws where appropriate; and
- Fall – the proper disposal of leaf litter.

#### General Permit Part 2.3.6: Stormwater Management in New Development and Redevelopment

Mendon’s Stormwater Management Bylaw shall include requirements that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal. Additionally, the Town’s retrofit inventory developed under BMP 5D shall consider BMPs that infiltrate stormwater when possible.

#### General Permit Part 2.3.7: Good House Keeping and Pollution Prevention for Permittee Owned Operations

The Town shall establish a program to properly manage grass cuttings and leaf litter on Town-owned properties, including prohibiting blowing organic waste onto impervious surfaces. Mendon shall also increase street sweeping to a minimum of two occurrences per year, once in the spring and at least once in the fall.

#### Phosphorus Source Identification Report

Within four years of the permit effective date, the Town must complete a Phosphorus Source Identification Report that includes the following components:

- Calculation of total MS4 area draining to the water quality limited receiving water segments or their tributaries, including updated mapping and catchment delineations completed under the IDDE Program;
- All screening and monitoring results targeting the receiving water segment(s);
- Impervious area and directly connected impervious area for the target catchment;
- Identification, delineation and prioritization of potential catchments with high phosphorus loading; and
- Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment, including the removal of impervious area.

#### Potential Structural BMPs

Within five years of the permit effective date, the Town must evaluate all Town-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under the Good Housekeeping Program or in the Phosphorus Source Identification Report that are within the drainage area of the water quality limited water or its tributaries. The evaluation shall include:

- The next planned infrastructure, resurfacing, or redevelopment activity planned for the property (if applicable) OR planned retrofit date;

- The estimated cost of redevelopment or retrofit BMPs; and
- The engineering and regulatory feasibility of redevelopment or retrofit BMPs.

The Town must also provide a list of planned structural BMPs and a plan and schedule for implementation. At least one structural BMP must be installed as a “demonstration project” within a catchment with high phosphorus load potential within six years of the permit effective date.

The estimated phosphorus removal by structural BMPs installed in Mendon’s regulated area must be tracked.

**4.2 Charles River Watershed Pathogen TMDL**

As described in Section 2.2.3 of the SWMP, a final TMDL for pathogens has been developed for the Charles River Watershed. This TMDL requires that Towns discharging to the impaired waterways within the Charles River Watershed comply with requirements in Appendix F of the General Permit. The Town of Mendon has already included these enhanced BMPs to meet the requirements for a bacteria impairment in Mill River as described above.

**4.3 Charles River Watershed Phosphorus TMDL**

As described in Section 2.2.3 of the SWMP, a final TMDL for phosphorus has been developed for the Charles River Watershed. This TMDL requires that Towns discharging to the impaired waterways within the Charles River Watershed comply with requirements in Appendix F of the General Permit. These requirements are summarized below as they apply to Mendon’s program.

Phosphorus Control Plan

The Town of Mendon shall develop a Phosphorus Control Plan (PCP) designed to reduce the amount of phosphorus in stormwater discharges from its MS4 to the Charles River and its tributaries. The PCP shall be completed in three phases and the Town shall include it in Appendix H of this SWMP upon completion. Phase 1 of the PCP shall be developed and implemented in accordance with the schedule outlined in Table 4-1 below.

**Table 4-1**  
Phosphorus Control Plan Phase 1 Schedule

<b>Phase</b>	<b>Description</b>	<b>Completion Date</b>
Phase 1	Legal Analysis of the regulatory mechanisms available to the Town of Mendon that may be necessary to effectively implement the PCP.	June 30, 2020
	Funding source assessment for anticipated funding mechanisms that will be used to fund PCP implementation.	June 30, 2021
	Define scope of PCP Area, Baseline Phosphorus Load, Phosphorus Reduction Requirement and Allowable Phosphorus Load.	June 30, 2022

<b>Phase</b>	<b>Description</b>	<b>Completion Date</b>
Phase 1	Description of Phase 1 planned non-structural controls necessary to support required Phase 1 phosphorus reductions.	June 30, 2023
	Description of Phase 1 planned structural controls necessary to support required Phase 1 phosphorus reductions.	June 30, 2023
	Description of Operations & Maintenance for all planned and existing structural BMPs being claimed for phosphorus reduction credit.	June 30, 2023
	Schedule for implementation of all planned Phase 1 BMPs, including obtaining funding, training, purchasing, construction, inspection, monitoring, operations and maintenance activities, and other assessment and evaluation components of implementation.	June 30, 2023
	Estimated cost for implementing Phase 1 non-structural and structural controls and the associated Operation and Maintenance Program	June 30, 2023
	Complete Written Phase 1 PCP including all components described above. The Town shall make the Phase 1 Plan available to the public for comment.	June 30, 2023
	Full implementation of non-structural controls	June 30, 2024
	Conduct a performance evaluation of the effectiveness of Phase 1 of the PCP by tracking the phosphorus reductions achieved through implementation of structural and non-structural BMPs and tracking increase resulting from development.	Conducted in Permit Years 6-10
	Full implementation of all structural controls used to demonstrate that the total phosphorus export rate from the PCP area ( $P_{exp}$ ) is equal to or less than the Allowable Phosphorus Load ( $P_{allow}$ ) plus 80% of the Phosphorus Reduction Requirement ( $P_{RR}$ ), i.e. $P_{exp} \leq P_{allow} + 0.8P_{RR}$	June 30, 2026
	Full implementation of all structural controls used to demonstrate that the total phosphorus export rate from the PCP area ( $P_{exp}$ ) is equal to or less than the Allowable Phosphorus Load ( $P_{allow}$ ) plus 75% of the Phosphorus Reduction Requirement ( $P_{RR}$ ), i.e. $P_{exp} \leq P_{allow} + 0.75P_{RR}$	June 30, 2028

The Charles River Watershed Association has developed estimates for the baseline phosphorus load, phosphorus load reduction requirement, allowable phosphorus load and percent reduction assuming the PCP Area is chosen to be only the urbanized area of Bellingham that falls within the Charles River Watershed. These estimates are included in Table 4-2 below.

**Table 4-2**

Phosphorus Load Reduction Estimates developed by the Charles River Watershed Association

<b>Baseline Phosphorus Load</b>	<b>Allowable Phosphorus Load</b>	<b>Phosphorus Load Reduction Requirement</b>	<b>Percent Reduction in Phosphorus Load</b>
801 kg/yr	510 kg/yr	291 kg/yr	36%

Phase 2 of the PCP shall be completed by June 30, 2028 and fully implemented as soon as possible, but no later than June 30, 2033. Phase 2 of the PCP will build off the requirements completed in Phase 1. The schedule of Phase 2 completion is outlined in Table 4-3 below.

**Table 4-3**

Phosphorus Control Plan Phase 2 Schedule

<b>Phase</b>	<b>Description</b>	<b>Completion Date</b>
Phase 2	Update of Legal Analysis conducted in Phase 1	As necessary
	Description of Phase 2 planned non-structural controls necessary to support required Phase 2 phosphorus reductions	June 30, 2028
	Description of Phase 2 planned structural controls necessary to support required Phase 2 phosphorus reductions	June 30, 2028
	Updated description of Operation and Maintenance Program developed in Phase 1 for all planned and existing structural BMPs being claimed for phosphorus reduction credit	June 30, 2028
	Schedule for implementation of all planned Phase 2 BMPs, including obtaining funding, training, purchasing, construction, inspection, monitoring, operations and maintenance activities, and other assessment and evaluation components of implementation.	June 30, 2028
	Estimated cost for implementing Phase 2 non-structural and structural controls and the associated Operation and Maintenance Program	June 30, 2028
	Complete Written Phase 2 PCP including all components described above. The Town shall make the Phase 2 Plan available to the public for comment.	June 30, 2028
	Conduct a performance evaluation of the effectiveness of Phase 2 of the PCP by tracking the phosphorus reductions achieved through implementation of structural and non-structural BMPs and tracking increase resulting from development.	Permit Years 11-15

Phase	Description	Completion Date
Phase 2	Full implementation of all structural controls used to demonstrate that the total phosphorus export rate from the PCP area ( $P_{exp}$ ) is equal to or less than the Allowable Phosphorus Load ( $P_{allow}$ ) plus 65% of the Phosphorus Reduction Requirement ( $P_{RR}$ ), i.e. $P_{exp} \leq P_{allow} + 0.65P_{RR}$	June 30, 2031
	Full implementation of all structural controls used to demonstrate that the total phosphorus export rate from the PCP area ( $P_{exp}$ ) is equal to or less than the Allowable Phosphorus Load ( $P_{allow}$ ) plus 50% of the Phosphorus Reduction Requirement ( $P_{RR}$ ), i.e. $P_{exp} \leq P_{allow} + 0.50P_{RR}$	June 30, 2033

Phase 3 of the PCP shall be completed by June 30, 2033 and fully implemented as soon as possible, but no later than June 30, 2038. Phase 3 of the PCP will build off the requirements completed in Phase 1 and 2. The schedule of Phase 3 completion is outlined in Table 4-4 below.

**Table 4-4**  
Phosphorus Control Plan Phase 3 Schedule

Phase	Description	Completion Date
Phase 3	Update of Legal Analysis conducted in Phase 1 and updated in Phase 2	As necessary
	Description of Phase 3 planned non-structural controls necessary to support required Phase 3 phosphorus reductions	June 30, 20233
	Description of Phase 3 planned structural controls necessary to support required Phase 3 phosphorus reductions	June 30, 2033
	Updated description of Operation and Maintenance Program for all planned and existing structural BMPs being claimed for phosphorus reduction credit	June 30, 2033
	Schedule for implementation of all planned Phase 3 BMPs, including obtaining funding, training, purchasing, construction, inspection, monitoring, operations and maintenance activities, and other assessment and evaluation components of implementation.	June 30, 2033
	Estimated cost for implementing Phase 3 non-structural and structural controls and the associated Operation and Maintenance Program	June 30, 2033
	Complete Written Phase 3 PCP including all components described above. The Town shall make the Phase 3 Plan available to the public for comment.	June 30, 2033
	Conduct a performance evaluation of the effectiveness of Phase 3 of the PCP by tracking the phosphorus reductions achieved through implementation of structural and non-structural BMPs and tracking increase resulting from development.	Permit Years 16-20

Phase	Description	Completion Date
Phase 3	Full implementation of all structural controls used to demonstrate that the total phosphorus export rate from the PCP area ( $P_{exp}$ ) is equal to or less than the Allowable Phosphorus Load ( $P_{allow}$ ) plus 30% of the Phosphorus Reduction Requirement ( $P_{RR}$ ), i.e. $P_{exp} \leq P_{allow} + 0.30P_{RR}$	June 30, 2036
	Full implementation of all structural controls used to demonstrate that the total phosphorus export rate from the PCP area ( $P_{exp}$ ) is equal to or less than the Allowable Phosphorus Load ( $P_{allow}$ ), i.e. $P_{exp} \leq P_{allow}$	June 30, 2038

#### 4.4 Additional Requirements for Discharges to Surface Drinking Water Supplies and Their Tributaries

According to Section 3.0 of the 2016 Small MS4 General Permit, MS4s that discharge to public surface drinking water supply sources or their tributaries should consider these waters a priority in the implementation of the SWMP. The Mendon MS4 is outside of any contributing area to public drinking water sources and there are no Zone I or Zone II areas in the Town of Mendon, therefore these requirements are not applicable.

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## Section 5 Program Evaluation, Record Keeping, and Reporting

### 5.1 Program Evaluation

The Town will annually self-evaluate its compliance with the terms and conditions of the 2016 General Permit, including the appropriateness of selected BMPs and progress toward defined measurable goals. The self-evaluation will be submitted as part of the Annual Report and maintained as part of the SWMP.

### 5.2 Record Keeping

The Town will keep all records required by the 2016 General Permit for **at least five years**, including, but not limited to the following key information:

- Monitoring results;
- Copies of reports;
- Records of outfall/interconnection screening;
- Follow-up and elimination of illicit discharges;
- Maintenance records; and
- Inspection records.

**Checklists of record keeping items Mendon should maintain are also included under each BMP in Section 3 of the SWMP.** Records relating to the 2016 General Permit, including the SWMP, will be made available to the public, as required by Section 4.2.c of the Permit.

### 5.3 Annual Reports

The Town will submit annual reports each year of the Small MS4 permit term, 90 days from the close of the reporting period (i.e., September 28). The reporting period will be a one-year period commencing on the permit effective date, and subsequent anniversaries thereof, except that the first annual report under the 2016 General Permit shall also cover the period from May 1, 2018 to the permit effective date, July 1, 2018.

Per Section 4.4.b of the 2016 General Permit, the annual reports shall contain the following information:

- i. A self-assessment review of compliance with the permit terms and conditions.*
- ii. An assessment of the appropriateness of the selected BMPs.*
- iii. The status of any plans or activities required by part 2.1 and/ or part 2.2, including:*
  - *Identification of all discharges determined to be causing or contributing to an exceedance of water quality standards and description of response including all items required by part 2.1.1;*

- *For discharges subject to TMDL related requirements, identification of specific BMPs used to address the pollutant identified as the cause of impairment and assessment of the BMPs effectiveness at controlling the pollutant (part 2.2.1. and Appendix F) and any deliverables required by Appendix F;*
  - *For discharges to water quality limited waters a description of each BMP required by Appendix H and any deliverables required by Appendix H.*
- iv. *An assessment of the progress towards achieving the measurable goals and objectives of each control measure in part 2.3 including:*
- *Evaluation of the public education program including a description of the targeted messages for each audience; method of distribution 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 the activities related to implementation of the IDDE program including: status of the map; status and results of the illicit discharge potential ranking and assessment; identification of problem catchments; status of all protocols described in part 2.3.4.(program responsibilities and systematic procedure); number and identifier of catchments evaluated; number and identifier of outfalls screened; number of illicit discharges located; number of illicit discharges removed; gallons of flow removed; identification of tracking indicators and measures of progress based on those indicators; and employee training.*
  - *Evaluation of the construction runoff management including number of project plans reviewed; number of inspections; and number of enforcement actions.*
  - *Evaluation of stormwater management for new development and redevelopment including status of ordinance development (2.3.6.a.ii.), review and status of the street design assessment(2.3.6.b.), assessments to barriers to green infrastructure (2.3.6.c) and retrofit inventory status (2.3.6.d.)*
  - *Status of the O&M Programs required by part 2.3.7.a.*
  - *Status of SWPPP required by part 2.3.7.b. including inspection results.*
  - *Any additional reporting requirements in part 3.0, including a progress report on the planning and implementation of the Phosphorus Control Plan.*
- v. *All outfall screening and monitoring data collected by or on behalf of the permittee during the reporting period and cumulative for the permit term, including but not limited to all data collected pursuant to part 2.3.4. The permittee shall also provide a description of any additional monitoring data received by the permittee during the reporting period.*
- vi. *Description of activities for the next reporting cycle.*
- vii. *Description of any changes in identified BMPs or measurable goals.*
- viii. *Description of activities undertaken by any entity contracted for achieving any measurable goal or implementing any control measure.*

Beginning in the Annual Report for Permit Year 5 and thereafter, the Town shall include the following information relevant to the Phosphorus Control Plan in compliance with the Charles River Watershed Phosphorus TMDL:

- *All non-structural control measures implemented during the reporting year along with the phosphorus reduction in mass/year calculated consisted with Attachment 2 to Appendix F of the General Permit.*
- *Structural controls implemented during the reporting year and all previous years including:*
  - *Location information for structural BMPs*
  - *Phosphorus reduction from all structural BMPs implemented to date calculated consistent with Attachment 3 to Appendix F.*
  - *Date of last completed maintenance and inspection for each Structural control*
- *Phosphorus load increases due to development over the previous reporting period and incurred since 2005 calculated consistent with Attachment 1 to Appendix F.*
- *Estimated yearly phosphorus export rate (P<sub>exp</sub>) from the PCP Area calculated using the equation below:*

$P_{exp} = P_{base} - (P_{sred} + P_{NSred}) + P_{DEVinc}$ , where  $P_{exp}$  is the current phosphorus export rate,  $P_{base}$  is the baseline phosphorus rate included in Table 4-2 of this document,  $P_{sred}$  is the reduction in phosphorus from implemented structural controls,  $P_{NSred}$  is the reduction in phosphorus from implemented non-structural controls, and  $P_{DEVinc}$  is the phosphorus increase from development since 2005. All loads are measured in mass of phosphorus per year.
- *Certification that all structural BMPs are being inspected and maintained according to the O&M program specified as part of the PCP.*
- *Certification that all municipally owned and maintained turf grass areas are being managed in accordance with Massachusetts Regulation 221 CMR 31 pertaining to the proper use of fertilizers on turf grasses.*

## 5.4 SWMP Modifications

Per Section 4.1 of the 2016 General Permit, the Town shall complete the following tasks:

- a. *The permittee shall annually self-evaluate its compliance with the terms and conditions of this permit and submit each self-evaluation in the Annual Report. The permittee shall also maintain the annual evaluation documentation as part of the SWMP.*
- b. *The permittee shall evaluate the appropriateness of the selected BMPs in achieving the objectives of each control measure and the defined measurable goals. Where a BMP is found to be ineffective the permittee shall change BMPs in accordance with the provisions below. In addition, permittees may augment or change BMPs at any time following the provisions below:*

- *Changes adding (but not subtracting or replacing) components or controls may be made at any time.*
- *Changes replacing an ineffective or infeasible BMP specifically identified in the SWMP with an alternative BMP may be made as long as the basis for the changes is documented in the SWMP by, at a minimum:*
  - *An analysis of why the BMP is ineffective or infeasible;*
  - *Expectations on the effectiveness of the replacement BMP; and*
  - *An analysis of why the replacement BMP is expected to achieve the defined goals of the BMP to be replaced.*

*The permittee shall indicate BMP modifications along with a brief explanation of the modification in each Annual Report.*

- c. *EPA or MassDEP may require the permittee to add, modify, repair, replace or change BMPs or other measures described in the annual reports as needed:*
- *To address impacts to receiving water quality caused or contributed to by discharges from the MS4; or*
  - *To satisfy conditions of this permit*

*Any changes requested by EPA or MassDEP will be in writing and will set forth the schedule for the permittee to develop the changes and will offer the permittee the opportunity to propose alternative program changes to meet the objective of the requested modification.*

The Town may update or revise the SWMP as needed as the Town's activities are modified, changed, or updated to meet permit conditions during the permit term. If it is necessary to modify or update the SWMP, the Town should follow this procedure to formalize the changes:

- *Keep a log with a description of the modification, the date, and the name and signature of the person making it; and*
- *Re-sign and date the certification statement in Section 6 of this SWMP.*

A SWMP amendment log and additional certification statements are located in Appendix G.

## **Section 6 SWMP Certification**

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

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

A letter that authorizes the Town of Mendon Highway Surveyor to sign and certify certain documents prepared under the Small MS4 General Permit is included in Appendix H.

## **Appendix A**

Notice of Intent and  
Authorization to Discharge Letter from EPA

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?**  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)

<b>Illicit Discharge Detection and Elimination (IDDE) Authority Adopted?</b> <small>(Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)</small>	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="12/31/09"/>
<b>Construction/Erosion and Sediment Control (ESC) Authority Adopted?</b> <small>(Part II, III, IV or V, Subpart B.4.(a.) of 2003 permit)</small>	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="11/30/10"/>
<b>Post- Construction Stormwater Management Adopted?</b> <small>(Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)</small>	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="11/30/10"/>

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

### Part II: Summary of Receiving Waters

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

Massachusetts list of impaired waters: [Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf](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
Mill River (MA51-35 and MA51-36, 12120)	32	<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"/>	Non-Native Aquatic Plants, Macrophytes, PCB in Fish Tissue, Other
Charles River (MA72-03, 20008)	4	<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"/>	DDT
Hop Brook (12121)	8	<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"/>	
Muddy Brook (12114)	78	<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"/>	
Nipmuck Pond (MA51111, 12094)	17	<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"/>	
Ohio Brook (12112)	10	<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"/>	
Rock Meadow Brook (12093)	41	<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"/>	
Round Meadow Brook (12117)	5	<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"/>	
Miscoe Brook (MA51-37, 12090)	5	<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"/>	
Spindleville Pond (12116)	9	<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"/>	
		<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"/>	
		<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 (continued)**

**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 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 require a target audience).

**MCM 1: Public Education and Outreach**

<b>BMP ID</b>	<b>BMP Media/Category</b>	<b>BMP Description</b>	<b>Targeted Audience</b>	<b>Responsible Department /Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
1A	Multi-media methods (including social media and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including proper pet waste management, proper maintenance of septic systems. Educational topics will include but are not limited to those in Part 2.3.2.d.i	Residents	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2019 (PY1)

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

<b>BMP ID</b>	<b>BMP Media/Category</b>	<b>BMP Description</b>	<b>Targeted Audience</b>	<b>Responsible Department /Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
1B	Multi-media methods (including web and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including impaired waterbodies. Educational topics will include but are not limited to those in Part 2.3.2.d.ii	Businesses, Institutions, and Commercial Facilities	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2020 (PY2)
1C	Multi-media methods (including web and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including impaired waterbodies. Educational topics will include but are not limited to those in Part 2.3.2.d.iii	Developers (Construction)	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2019(PY1)

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

<b>BMP ID</b>	<b>BMP Media/Category</b>	<b>BMP Description</b>	<b>Targeted Audience</b>	<b>Responsible Department /Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
1D	Multi-media methods (including web and print materials)	Education and outreach on stormwater management topics of significance in Mendon, including impaired waterbodies. Educational topics will include but are not limited to those in Part 2.3.2.d.iv	Industrial Facilities	Planning/ Conservation	Distribute a minimum of two (2) educational messages spaced at least a year apart	FY 2020 (PY2)
1E	Public Education Goals and Progress	Educational goals (programmatic and message specific) will be defined in the SWMP.	All	Planning/ Conservation	Annually report methods/measures to evaluate effectiveness and progress to meet meeting goals.	FY 2019 (PY1)

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

### Part III: Stormwater Management Program Summary

#### MCM 2: Public Involvement and Participation

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department / Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
2A	Public Review	SWMP Review	Planning/ Conservation	Annually provide the public with an opportunity to participate in the review and implementation of the SWMP	FY 2019 (PY1)
2B	Public Participation	Provide opportunities for public involvement and participation in Mendon's stormwater program. Specific activities, schedule, and lead departments are included in the SWMP.	Planning/ Conservation	Ongoing compliance	FY 2019 (PY1)
2C	Public Review	Stormwater Management Task Force (Town Administrator, Highway Dept, Conservation Commission, Planning, Board of Health, Parks and Recreation, Police Dept, Fire Dept Sustainability Committee)	Planning/ Conservation	At a minimum, Stormwater Management Task Force will meet annually.	FY 2019 (PY1)

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

### Part III: Stormwater Management Program Summary

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

BMP ID	BMP Category	BMP Description	Responsible Department / Parties	Measurable Goal	Beginning Year of BMP Implementation
3A	IDDE Ordinance/Bylaw	Complete. Continue to enforce and update if necessary.	Highway Dept./ Health	Track illicit discharges identified and removed. Track permits issues with certification of no illicit connections.	FY 2019 (PY1)
3B	Storm drainage system map	Mapping Completed with Pipes, Catch basins and Outfalls. Improve map during IDDE Program implementation.	Highway Dept.	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	FY 2019 (PY1)
3C	Written IDDE program	Create written IDDE program	Highway Dept. / Health	Complete within 1 year of the effective date of permit and update as required	FY 2019 (PY1)
3D	Assessment and Priority Ranking of Outfalls & Interconnections	1. Completed Initial Catchment Delineation and Priority Ranking as part of BMP 3D for outfalls in the urbanized area.	Highway Dept.	Complete within 1 year of the effective date of permit and update as necessary	FY 2019 (PY1)

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

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department / Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
3D	Assessment and Priority Ranking of Outfalls & Interconnections	2. Completed Dry Weather Outfall Screening & Sampling in accordance with IDDE Plan and permit conditions for all outfalls with dry weather flow	Highway Dept.	Complete 3 years after effective date of permit. Track # illicit discharges identified & volume removed. Summarize screening/sampling results.	FY 2019 (PY1)
3D	Assessment and Priority Ranking of Outfalls & Interconnections	3. Catchment Investigations according to IDDE program and permit conditions	Highway Dept.	Complete 10 years after effective date of permit. Track # and percentage of MS4 catchments evaluated. Track # illicit discharges identified & volume removed. Summarize screening/sampling results.	FY 2020 (PY2)
3E	Employee Training	Train employees on IDDE implementation	Highway Dept.	Train annually. Track employees trained, training topic, date/time, and materials presented.	FY 2019 (PY1)

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

### Part III: Stormwater Management Program Summary

#### MCM 4: Construction Site Stormwater Runoff Control

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department / Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
4A	Construction Bylaw and Regulations	Modify local bylaw and regulations, if necessary, to contain new MS4 provisions per section 2.3.5.	Planning Board	Review current procedures and modify if necessary within 1 year of permit effective date	FY 2019 (PY1)
4B	Construction Policy and Procedures	Develop and implement written procedures for site inspections and enforcement procedures per section 2.3.5.	Planning Board	Review current procedures and modify if necessary within 1 year of permit effective date	FY 2019 (PY1)

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

### Part III: Stormwater Management Program Summary

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

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department / Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
5A	Post-Construction Bylaw and Regulations	Modify local bylaw and regulations to contain new MS4 provisions per section 2.3.6.a.	Planning Board	Modify existing bylaw and regulations within two (2) years of permit effective date	FY 2020 (PY2)
5B	Assess street 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	Complete report no later than (4) years of permit effective date	FY 2021 (PY3)
5C	Assess allowing 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	Complete report no later than (4) years of permit effective date	FY 2021 (PY3)

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

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department / Parties</b>	<b>Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
5D	Retrofit Feasibility Assessment	Detailed inventory of Town-owned properties is complete. Rank Town-owned properties for retrofit potential.	Planning Board	Complete report no later than 4 years of permit effective date, beginning in year 5 keep running list of at least 5 retrofit sites	FY 2021 (PY3)

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

### Part III: Stormwater Management Program Summary

#### MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP ID	BMP Category	BMP Description	Responsible Department / Parties	Additional Description/Measurable Goal	Beginning Year of BMP Implementation
6A	Operation & Maintenance Program	Completed inventory of all permittee-owned <b>parks and open spaces, buildings and facilities</b> (including their storm drains), and <b>vehicles and equipment</b> . Create O&M procedures for all properties in the inventory.	Highway, Planning, Parks and Recreation	Complete 2 years after permit effective date, implement in following years	FY 2019 (PY1)
6B	Operation & Maintenance Program	Establish and implement program for repair and rehabilitation of <b>MS4 infrastructure</b>	Highway Dept	Complete 2 years after permit effective date, implement in following years	FY 2019 (PY1)
6C	Stormwater Pollution Prevention Plans (SWPPP)	Maintain/implement previously developed SWPPP and SPCC BMPs at the highway garage.	Highway Dept	Complete SWPPPs within 2 year of permit effective date, implement in following years	FY 2020 (PY2)

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

<b>BMP ID</b>	<b>BMP Category</b>	<b>BMP Description</b>	<b>Responsible Department / Parties</b>	<b>Additional Description/Measurable Goal</b>	<b>Beginning Year of BMP Implementation</b>
6D	Operation & Maintenance Program	1. Implement procedures to optimize catch basin cleaning developed under BMP 6B	Highway Dept.	Track frequency and material quantity of catch basin cleaning in town.  In first Annual Report and in SWMP, document plan for optimizing catch basin cleaning.	FY 2019 (PY1)
6D	Operation & Maintenance Program	2. Implement procedures for street and parking lot sweeping developed under BMP 6B	Highway Dept.	Annually track number of miles cleaned or the volume or mass of material removed.	FY 2019 (PY1)
6D	Operation & Maintenance Program	3. Implement procedures for use and storage of deicing materials developed under BMP 6B	Highway Dept.	Implement program for winter road maintenance throughout permit term.	FY 2019 (PY1)
6D	Operation & Maintenance Program	4. Implement procedures to inspect and maintain Town-owned structural stormwater BMPs	Highway Dept.	Develop an inventory of Town-owned BMPs by PY3. Report on inspection and maintenance conducted annually.	FY 2019 (PY1)





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.

1. BMPs identified in the 2003 General Permit NOI have evolved over the permit term due to staff changes and Stormwater Program modifications. The intent of the 2003 BMPs are being met under the proposed 2016 General Permit BMPs included in the Stormwater Management Plan. The Plan describes how the BMPs under the 2003 permit fit into the new program, particularly where BMPs and/or measurable goals that are outdated or no longer appropriate have been replaced or updated.
2. The National Endangered Species Eligibility Determination screening process has been completed and the Town of Mendon meets Criterion C. The Town's stormwater discharges and discharge related activities will have no affect on listed species or critical habitat. The Town will consult with U.S. Fish and Wildlife as needed during the permit term.
3. The National Historic Preservation Act Eligibility Determination screening process has been completed and the Town of Mendon meets Criterion A. The Town's stormwater discharges do not have the potential to cause effects on historic properties. The Town will consult with the State Historic Preservation Officer as needed during the permit term.
4. The outfalls and associated receiving waters in Part II are based on mapping as of September 2018 and are subject to change during implementation of the Stormwater Management Program as newly constructed outfalls are added to the map and inventory; locations are adjusted; or outfalls are removed if they are determined to be non-municipally owned/operated or reclassified as a BMP inlet, culvert, or other structure. Changes to the outfall inventory and mapping will be formalized in Annual Reports to EPA.
5. There is no sanitary sewer system in Mendon and therefore Part 2.3.4.4 of the General Permit, Sanitary Sewer Overflows, does not apply to the Town.

Detailed explanations of the above notes will be included in the Town's Stormwater Management Plan.

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

## Part V: Certification

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

Name:

Mark W. Reel Jr.

Title:

Chair, BOS

Signature:

*Mark W. Reel Jr.*

Date:

9/25/18

[To be signed according to Appendix B, Subparagraph B(1), Standard Conditions]

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

UPTON

HOPEDALE

CHARLES

MILLVILLE

BLACKSTONE

# OUTFALL CATCHMENTS MENDON, MASSACHUSETTS

Manhole July 2016

Outfall

Catch Basin

Drain Line

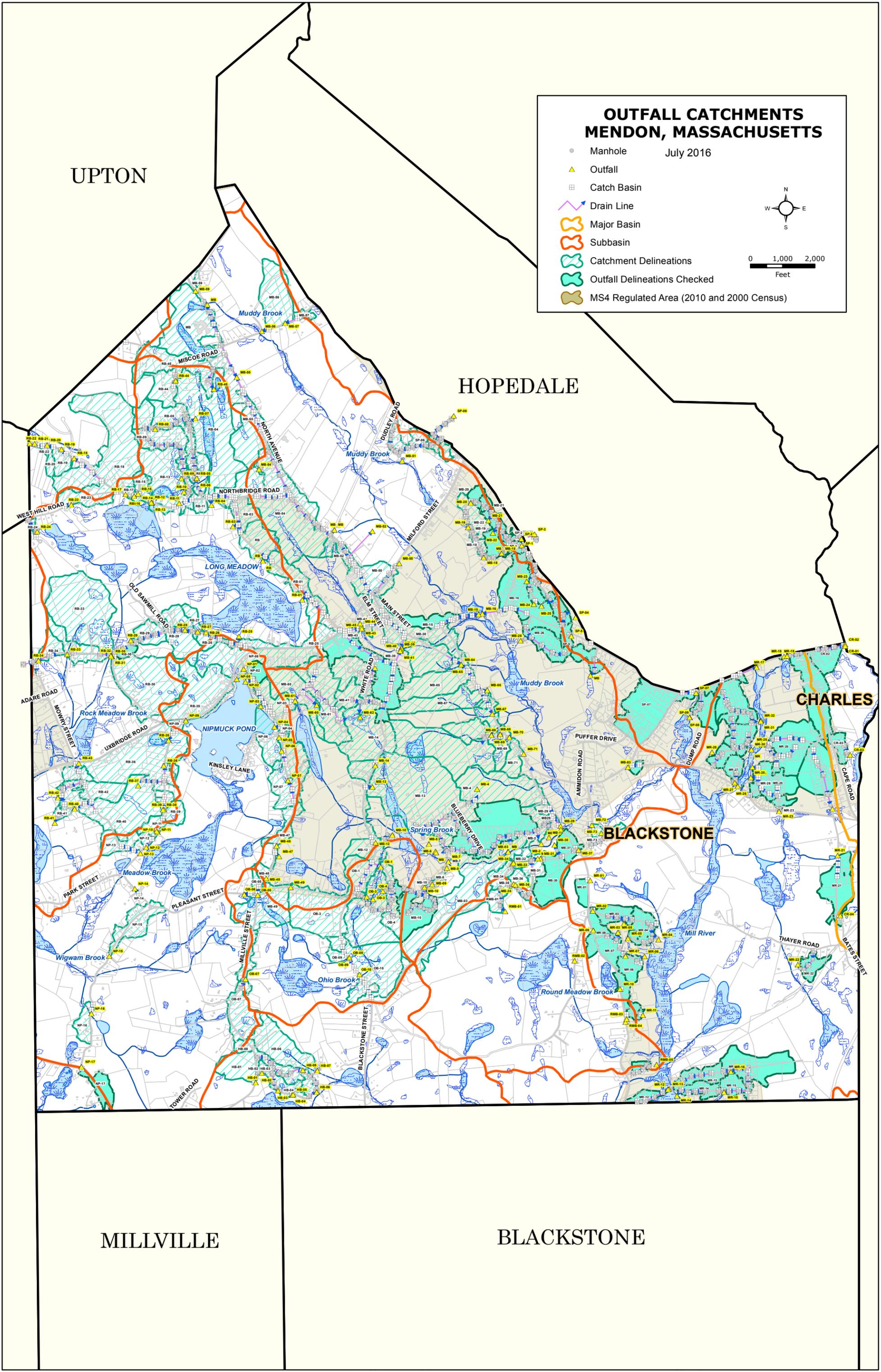
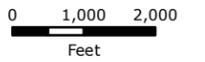
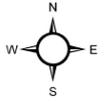
Major Basin

Subbasin

Catchment Delineations

Outfall Delineations Checked

MS4 Regulated Area (2010 and 2000 Census)



**From:** [Gabrielle C. Belfit](#)  
**To:** [Vuto, Michelle](#)  
**Cc:** [highwaydpt@mendonma.gov](mailto:highwaydpt@mendonma.gov)  
**Subject:** RE: Small MS4 NOI submission - additional or corrected information required  
**Date:** Wednesday, March 20, 2019 10:43:14 AM  
**Attachments:** [image002.png](#)

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Hi Michelle

Thank you very much for the call back.

In response to your request, please amend the Town of Mendon's Notice of Intent (NOI), Part III. In accordance with Part 2.2.2.b. of the General Permit, the Town of Mendon will meet the requirements of Part II of Appendix H with respect to control of Phosphorus where direct discharges from the MS4 enter receiving waters within the Blackstone River watershed. Item No. 6 in Part IV of the NOI should be struck.

Please let us know if this statement is acceptable, and thank you for clarifying this requirement in previous discussions with Tighe & Bond's stormwater team.

Regards,  
Gabrielle

**Gabrielle Belfit, CFM** | Senior Environmental Scientist  
**Tighe & Bond** | 4 Barlows Landing Road, Unit #15 Pocasset, MA 02559 | 508.304.6362 | 508.367.5598  
(cell)  
[www.tighebond.com](http://www.tighebond.com) | Follow us on: [Twitter](#) [Facebook](#) [LinkedIn](#)

**Tighe&Bond**

**We hope you like our [New Website](#)**

---

**From:** Vuto, Michelle <Vuto.Michelle@epa.gov>  
**Sent:** Tuesday, March 19, 2019 2:30 PM  
**To:** highwaydpt@mendonma.gov  
**Cc:** Gabrielle C. Belfit <GCBelfit@tigheBond.com>  
**Subject:** Small MS4 NOI submission - additional or corrected information required

[ Caution - External Sender ]

Hi Alan,

EPA is reviewing Mendon's Small MS4 NOI and needs additional information in order to continue with the review process. Please confirm that the town will follow part II of Appendix H for phosphorus for waterbodies in the Blackstone River Watershed.

Please respond with the requested information as soon as you can. If the additional information is not received within 30 days of the date on this email EPA may initiate the process to deny your NOI,

unless additional time is granted by EPA for such submission.

Let me know if you have any questions.

Thanks,  
Michelle

**Michelle Vuto**  
**Stormwater & Construction Permits**  
**U.S. EPA Region 1**  
**5 Post Office Square—OEP06-4**  
**Boston, MA 02109-3912**  
**617-918-1222**



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

**VIA EMAIL**

May 30, 2019

Mark W. Reil Jr.  
Chair, BOS

And;

Alan D. Tetreault  
Highway Surveyor  
66 Providence Street  
Mendon, MA. 01756  
highwaydpt@mendonma.gov

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041133, Town of Mendon

Dear Alan D. Tetreault:

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](mailto: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**

Summary of 2003 and 2016 MS4 General Permit BMPs

## Appendix B Summary of 2003 and 2016 MS4 General Permit BMPs

BMPs identified in the 2003 General Permit NOI have evolved over the permit term due to staff changes and Stormwater Program modifications. The intent of the 2003 BMPs are being met under the following proposed 2016 General Permit BMPs (BMPs current as of 2017 Annual Report):

1A	Community Website	Now under BMPs 1A-D
1B	Newspaper Press Release	Now under BMPs 1A-D
1C	Hazardous Waste Collection Day	Now under BMP 2B
1D	Educational Displays	Now under BMPs 1A-D
1E	Classroom Education	Now under BMP 1A-B, 1E, 2B
1F	Educational Pamphlets	Now under BMPs 1A-D
2A	Adopt-A-Road	Now under BMP 2B
2B	Storm Drain Stenciling	Now under BMP 1E
2C	Roadway Clean up Day	Now under BMP 2B
2D	Adopt-A-Stream	Now under BMP 2B
2E	Poster Contest	Now under BMP 1E and 2B
3A	Mapping Stormwater Outfalls	Now under BMP 3B
3B	Non-Stormwater Ordinance	Now under BMP 3A
3C	Develop Illicit Discharge Plan	Now under BMP 3A-E
3D	Illegal Dumping	Now under BMP 3A
3E	Non-stormwater discharge	Now under BMP 3D
3F	DPW Employee Education	Now under BMP 3E
3G	Failing Septic Systems	Now under BMP 1A, 3D
3H	Video Inspection	Now under BMP 3D
4A	Construction site runoff Ordinance	Now under BMP 4A
4B	Plan Review	Now under BMP 4B
4C	Inspection/Reporting	Now under BMP 4B
5A	Post Construction Runoff Ordinance	Now under BMP 5A
5B	Construction site plan review	Now under BMP 4B, 5A
5C	Stormwater System Maintenance Plan Catch Basin Cleaning	Now under BMP 6A-B and 6D
6A	Catch Basin Program	Now under BMP 6D
6B	Street Sweeping and Parking Lot Cleaning	Now under BMP 6D
6C	SWPPP/MSGP	Now under BMP 6C
6D	Curbside Recycling	Now under BMP 2B
6E	Metal Dumpster Recycling Program	Now under BMP 2B
6F	Mercury Therm. and BCB Programs	Now under BMP 2B
6G	Composting Program	Now Under BMP 2B, 6A
6H	Trash Collection	Now under BMP 2B

## **Appendix C**

Endangered Species Act Eligibility Criteria Documentation

## Endangered Species Act Eligibility Certification

**TO:** Town of Mendon  
**FROM:** Tighe & Bond  
**COPY:** Alan Tetreault  
**DATE:** August 1, 2018

---

Part 1.9.1 of the U.S. EPA's National Pollutant Discharge Elimination System (NPDES) General Permits from Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, effective July 1, 2018<sup>1</sup>, requires communities covered by the Permit to certify eligibility regarding federal Endangered and Threatened Species and Critical Habitat Protection on the Notice of Intent (NOI) due to EPA and MassDEP by October 1, 2018, and to maintain documentation in the Stormwater Management Program records. To certify eligibility, there are three criteria to choose from:

- Criterion A: No endangered or threatened species or critical habitat are in proximity to the stormwater discharges or discharge related activities.
- Criterion B: In the course of formal or informal consultation with the Fish and Wildlife Service, under section 7 of the ESA, the consultation resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by USFWS on a finding that the stormwater discharges and discharge related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation).
- Criterion C: Using the best scientific and commercial data available, the effect of the stormwater discharge and discharge related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the applicant and affirmed by EPA, that the stormwater discharges and discharge related activities will have "no affect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the USFWS.

Tighe & Bond has begun the National Endangered Species Eligibility Determination screening process in accordance with Part 1.9.1 and Appendix C (see Attachment A of this memorandum), of the Permit.

### Step 1:

Tighe & Bond went to the IPaC website<sup>2</sup> and created an IPaC Trust Resources Report, included in Attachment B to this memorandum. This Report lists the following species that may occur or could potentially be affected by activities in the Town:

- Northern Long-eared Bat.

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<sup>1</sup> Revised effective date according to 6/29/17 EPA memo from EPA Region 1 Acting Regional Administrator

<sup>2</sup> <http://ecos.fws.gov/ipac/>

This report also documents that there are no critical habitats in Mendon.

**Step 2:**

Tighe & Bond then went to the U.S. Fish & Wildlife Service New England Field Office website for Endangered Species Reviews/Consultations<sup>3</sup> and selected the Massachusetts state list<sup>4</sup> to review which Towns have federally-listed species. A copy of the list of Federally Listed Endangered and Threatened Species in Massachusetts is included in Attachment C to this memorandum. Based on review of this list the Northern Long-eared Bat is listed statewide and therefore applies to communities in Worcester County.

**Step 3:**

Per the USFWS endangered species consultation guidance, Tighe & Bond visited the Massachusetts Natural Heritage and Endangered Species Program (NHESP) species information and conservation website about the the Northern Long-eared Bat<sup>5</sup>. Attachment D includes a map showing there are no roost trees or hibernating locations for the Bat within Mendon.

Based on the results of the NHESP website review, there is no potential habitat for any listed species within the action area and therefore discharge or discharge related activities are not likely to adversely affect listed species.

**Town's Action**

To confirm the Town of Mendon can meet **Criterion C**, the Town must submit a letter to the USFWS to initiate consultation and obtain either a "no jeopardy" opinion by the USFWS (for formal consultation) or concurrence by the USFWS that Town activities would be "not likely to adversely affect" listed species or critical habitat (for informal consultation).

If the consultation is conditioned upon measures, the Town must agree to implement those measures.

Finally, if during the course of the permit term, Mendon plans to install a structural BMP not identified in the NOI that Mendon will re-initiate informal or formal consultation with USFWS as necessary.

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<sup>3</sup> [https://www.fws.gov/newengland/EndangeredSpec-Consultation\\_Project\\_Review.htm](https://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm)

<sup>4</sup> <https://www.fws.gov/newengland/pdfs/MA%20species%20by%20town.pdf>

<sup>5</sup> <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-mammals/northern-long-eared-bat.html>

## Attachment A

Appendix C of U.S. EPA's National Pollutant Discharge Elimination System (NPDES) General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts

## APPENDIX C ENDANGERED SPECIES GUIDANCE

### A. Background

In order to meet its obligations under the Clean Water Act and the Endangered Species Act (ESA), and to promote the goals of those Acts, the Environmental Protection Agency (EPA) is seeking to ensure the activities regulated by this general permit do not adversely affect endangered and threatened species or critical habitat. 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 those goals are met. Prior to obtaining general permit coverage, applicants must meet the ESA eligibility provisions of this permit by following the steps in this Appendix<sup>1</sup>.

Applicants also have an independent ESA obligation to ensure that their activities do not result in any prohibited “take” of listed species<sup>2</sup>. The term “Take” is used in the ESA to include harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. “Harass” is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Many of the measures required in this general permit and in these instructions to protect species may also assist in ensuring that the applicant’s activities do not result in a prohibited take of species in violation of section 9 of the ESA. If the applicant has plans or activities in an area where endangered and threatened species are located, they may wish to ensure that they are protected from potential take liability under ESA section 9 by obtaining an ESA section 10 permit or by requesting formal consultation under ESA section 7. Applicants that are unsure whether to pursue a section 10 permit or a section 7 consultation for takings protection should confer with the appropriate United States Fish and Wildlife Service (USFWS) office or the National Marine Fisheries Service (NMFS), (jointly the Services).

Currently, there are 20 species of concern for applicants applying for permit coverage, namely the Dwarf wedgemussel (*Alasmidonta heterodon*), Northeastern bulrush (*Scirpus ancistrochaetus*), Sandplain gerardia (*Agalinis acuta*), Piping Plover (*Charadrius melodus*), Roseate Tern (*Sterna dougallii*), Northern Red-bellied cooter (*Pseudemys rubriventis*), Bog Turtle (*Glyptemys muhlenbergii*), Small whorled Pogonia (*Isotria medeoloides*), Puritan tiger beetle (*Cicindela puritana*), American burying beetle (*Nicrophorus americanus*), Northeastern beach tiger beetle (*Cicindela dorsalis*), Northern Long-eared Bat (*Myotis septentrionalis*), Atlantic Sturgeon (*Acipenser oxyrinchus*), Shortnose Sturgeon (*Acipenser brevirostrum*), North Atlantic Right Whale (*Eubalaena glacialis*), Humpback Whale (*Megaptera novaengliae*), Fin Whale (*Balaenoptera physalus*), Kemp’s Ridley Sea Turtle (*Lepidochelys kempii*), Loggerhead Sea Turtle (*Caretta caretta*), Leatherback Sea Turtle (*Dermochelys coriacea*), and the Green Turtle (*Chelonia*

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<sup>1</sup> EPA strongly encourages applicants to begin this process at the earliest possible stage to ensure the notification requirements for general permit coverage are complete upon Notice of Intent (NOI) submission.

<sup>2</sup> Section 9 of the ESA prohibits any person from “taking” a listed species (e.g. harassing or harming it) unless: (1) the taking is authorized through an “incidental take statement” as part of completion of formal consultation according to ESA section 7; (2) where an incidental take permit is obtained under ESA section 10 (which requires the development of a habitat conversion plan; or (3) where otherwise authorized or exempted under the ESA. This prohibition applies to all entities including private individuals, businesses, and governments.

*mydas*). The Atlantic Sturgeon, Shortnose Sturgeon, North Atlantic Right Whale, Humpback Whale, Fin Whale, Loggerhead Sea Turtle, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle and Green Turtle are listed under the jurisdiction of NMFS. The Dwarf wedgemussel, Northeastern bulrush, Sandplain gerardia, Piping Plover, Northern Red-bellied cooter, Bog Turtle, Small whorled Pogonia, Roseate Tern, Puritan tiger beetle, Northeastern beach tiger beetle, Northern Long-eared Bat and American burying beetle are listed under the jurisdiction of the U.S. Fish and Wildlife Service.

Any applicant seeking coverage under this general permit, must consult with the Services where appropriate. When listed species are present, permit coverage is only available if EPA determines, or the applicant determines and EPA concurs, that the discharge or discharge related activities will have "no affect" on the listed species or critical habitat, or the applicant or EPA determines that the discharge or discharge related activities are "not likely to adversely affect" listed species or critical habitat and formal or informal consultation with the Services has been concluded and results in written concurrence by the Services that the discharge is "not likely to adversely affect" an endangered or threatened species or critical habitat.

EPA may designate the applicants as non-Federal representatives for the general permit for the purpose of carrying out formal or informal consultation with the Services (See 50 CFR §402.08 and §402.13). By terms of this permit, EPA has automatically designated operators as non-Federal representatives for the purpose of conducting formal or informal consultation with the U.S. Fish and Wildlife Service. EPA has not designated operators as non-Federal representatives for the purpose of conducting formal or informal consultation with the National Marine Fisheries Service. EPA has determined that discharges from MS4s are not likely to adversely affect listed species or critical habitat under the jurisdiction of the National Marine Fisheries Service. EPA has initiated informal consultation with the National Marine Fisheries Service on behalf of all permittees and no further action is required by permittees in order to fulfill ESA requirements of this permit related to species under the jurisdiction of NMFS

#### B. The U.S. Fish and Wildlife Service ESA Eligibility Process

Before submitting a notice of intent (NOI) for coverage by this permit, applicants must determine whether they meet the ESA eligibility criteria by following the steps in Section B of this Appendix. Applicants that cannot meet the eligibility criteria in Section B must apply for an individual permit.

The USFWS ESA eligibility requirements of this permit relating to the Dwarf wedgemussel, Northeastern bulrush, Sandplain gerardia, Piping Plover, Northern Red-bellied cooter, Bog Turtle, Small whorled Pogonia, Roseate Tern, Puritan tiger beetle, Northeastern beach tiger beetle, Northern Long-eared Bat and American burying beetle may be satisfied by documenting that one of the following criteria has been met:

USFWS Criterion A: No endangered or threatened species or critical habitat are in proximity to the stormwater discharges or discharge related activities.

USFWS Criterion B: In the course of formal or informal consultation with the Fish and Wildlife Service, under section 7 of the ESA, the consultation resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by USFWS on a finding that the stormwater discharges and

discharge related activities are “not likely to adversely affect” listed species or critical habitat (informal consultation).

USFWS Criterion C: Using the best scientific and commercial data available, the effect of the stormwater discharge and discharge related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the applicant and affirmed by EPA, that the stormwater discharges and discharge related activities will have “no affect” on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the USFWS.

#### 1. The Steps to Determine if the USFWS ESA Eligibility Criteria Can Be Met

To determine eligibility, you must assess the potential effects of your known stormwater discharges and discharge related activities on listed species or critical habitat, PRIOR to completing and submitting a Notice of Intent (NOI). You must follow the steps outlined below and document the results of your eligibility determination.

#### **Step 1 – Determine if you can meet USFWS Criterion A**

USFWS Criterion A: You can certify eligibility, according to USFWS Criterion A, for coverage by this permit if, upon completing the Information, Planning, and Conservation (IPaC) online system process, you printed and saved the preliminary determination which indicated that federally listed species or designated critical habitats are not present in the action area. See Attachment 1 to Appendix C for instructions on how to use IPaC.

*If you have met USFWS Criterion A skip to Step # 4.*

*If you have not met USFWS Criterion A, go to Step # 2.*

#### **Step 2 – Determine if You Can Meet Eligibility USFWS Criteria B**

USFWS Criterion B: You can certify eligibility according to USFWS Criteria B for coverage by this permit if you answer “Yes” to **all** of the following questions:

- 1) Does your action area contain one or more of the following species: Sandplain gerardia, Small whorled Pogonia, American burying beetle, Dwarf wedgemussel, Northeastern bulrush, Piping Plover, Northern Red-bellied cooter, Bog Turtle, Roseate Tern, Puritan tiger beetle, and Northeastern beach tiger beetle?  
AND
- 2) Did your assessment of the discharge and discharge related activities indicate that the discharge or discharge related activities “may affect” or are “not likely to adversely affect” listed species or critical habitat?  
AND
- 3) Did you contact the USFWS and did the formal or informal consultation result in either a “no jeopardy” opinion by the USFWS (for formal consultation) or concurrence by the

USFWS that your activities would be “not likely to adversely affect” listed species or critical habitat (for informal consultation)?

AND

- 4) Do you agree to implement all measures upon which the consultation was conditioned?
- 5) Do you agree that if, during the course of the permit term, you plan to install a structural BMP not identified in the NOI that you will re-initiate informal or formal consultation with USFWS as necessary?

Use the guidance below Step 3 to understand effects determination and to answer these questions.

*If you answered “Yes” to all four questions above, you have met eligibility USFWS Criteria B. Skip to Step 4.*

*If you answered “No” to any of the four questions above, go to Step 3.*

### **Step 3 – Determine if You Can Meet Eligibility USFWS Criterion C**

USFWS Criterion C: You can certify eligibility according to USFWS Criterion C for coverage by this permit if you answer “Yes” to both of the following question:

- 1) Does your action area contain one or more of the following species: Northern Long-eared Bat, Sandplain gerardia, Small whorled Pogonia and/or American burying beetle and **does not** contain one any following species: Dwarf wedgemussel, Northeastern bulrush, Piping Plover, Northern Red-bellied cooter, Bog Turtle, Roseate Tern, Puritan tiger beetle, and Northeastern beach tiger beetle?<sup>3</sup>
- OR
- 2) Did the assessment of your discharge and discharge related activities and indicate that there would be “no affect” on listed species or critical habitat and EPA provided concurrence with your determination?
- 3) Do you agree that if, during the course of the permit term, you plan to install a structural BMP not identified in the NOI that you will to conduct an endangered species screening for the proposed site and contact the USFWS if you determine that the new activity “may affect” or is “not likely to adversely affect” listed species or critical habitat under the jurisdiction of the USFWS.

Use the guidance below to understand effects determination and to answer these questions.

*If you answered “Yes” to both the question above, you have met eligibility USFWS Criterion C. Go to Step 4.*

*If you answered “No” to either of the questions above, you are not eligible for coverage by this permit. You must submit an application for an individual permit for your stormwater discharges. (See 40 CFR 122.21).*

### **USFWS Effects Determination Guidance:**

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If you are unable to certify eligibility under USFWS Criterion A, you must assess whether your stormwater discharges and discharge-related activities “may affect”, will have “no affect” or are “not likely to adversely affect” listed species or critical habitat. “Discharge-related activities” include: activities which cause, contribute to, or result in point source stormwater pollutant discharges; and measures to provide treatment for stormwater discharges including the siting, construction and operational procedures to control, reduce or prevent water pollution. Please be aware that no protection from incidental take liability is provided under this criterion.

The scope of effects to consider will vary with each system. If you are having difficulty in determining whether your system is likely to cause adverse effects to a listed species or critical habitat, you should contact the USFWS for assistance. In order to complete the determination of effects it may be necessary to follow the formal or informal consultation procedures in section 7 of the ESA.

Upon completion of your assessment, document the results of your effects determination. If your results indicate that stormwater discharges or discharge related activities will have “no affect” on threatened or endangered species or critical habitat and EPA concurs with your determination, you are eligible under USFWS Criterion C of this Appendix. Your determination may be based on measures that you implement to avoid, eliminate, or minimized adverse effects.

*If the determination is “May affect” or “not likely to adversely affect”* you must contact the USFWS to discuss your findings and measures you could implement to avoid, eliminate, or minimize adverse effects. If you and the USFWS reach agreement on measures to avoid adverse effects, you are eligible under USFWS Criterion B. Any terms and/or conditions to protect listed species and critical habitat that you relied on in order to complete an adverse effects determination, must be incorporated into your Storm Water Management Program (required by this permit) and implemented in order to maintain permit eligibility.

*If endangered species issues cannot be resolved:* If you cannot reach agreement with the USFWS on measures to avoid or eliminate adverse effects then you are not eligible for coverage under this permit. You must seek coverage under an individual permit.

Effects from stormwater discharges and discharge-related activities which could pose an adverse effect include:

- *Hydrological:* Stormwater discharges may cause siltation, sedimentation, or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.
- *Habitat:* Excavation, site development, grading and other surface disturbance activities, including the installation or placement of treatment equipment may adversely affect listed species or their habitat. Stormwater from the small MS4 may inundate a listed species habitat.

- *Toxicity*: In some cases, pollutants in the stormwater may have toxic effects on listed species.

#### **Step 4 - Document Results of the Eligibility Determination**

Once the USFWS ESA eligibility requirements have been met, you shall include documentation of USFWS ESA eligibility in the Storm Water Management Program required by the permit. Documentation for the various eligibility criteria are as follows:

- USFWS Criterion A: A copy of the IPaC generated preliminary determination letter indicating that no listed species or critical habitat is present within your action area. You shall also include a statement on how you determined that no listed species or critical habitat are in proximity to your stormwater system or discharges.
- USFWS Criterion B: A dated copy of the USFWS letter of concurrence on a finding of “no jeopardy” (for formal consultation) or “not likely to adversely affect” (for informal consultation) regarding the ESA section 7 consultation.
- USFWS Criterion C: A dated copy of the EPA concurrence with the operator’s determination that the stormwater discharges and discharge-related activities will have “no affect” on listed species or critical habitat.

#### **C. Submittal of Notice of Intent**

Once the ESA eligibility requirements of Part C of this Appendix have been met you may submit the Notice of Intent indicating which Criterion you have met to be eligible for permit coverage. Signature and submittal of the NOI constitutes your certification, under penalty of law, of eligibility for permit coverage under 40 CFR 122.21.

#### **D. Duty to Implement Terms and Conditions upon which Eligibility was Determined**

You must comply with any terms and conditions imposed under the ESA eligibility requirements to ensure that your stormwater discharges and discharge related activities do not pose adverse effects or jeopardy to listed species and/or critical habitat. You must incorporate such terms and conditions into your Storm Water Management Program as required by this permit. If the ESA eligibility requirements of this permit cannot be met, then you may not receive coverage under this permit and must apply for an individual permit.

#### **E. Services Information**

United States Fish and Wildlife Service Office

National websites for Endangered Species Information:  
Endangered Species home page: <http://endangered.fws.gov>  
ESA Section 7 Consultations: <http://endangered.fws.gov/consultation/index.html>  
Information, Planning, and Conservation System (IPAC): <http://ecos.fws.gov/ipac/>

U.S. FWS – Region 5  
Supervisor

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

#### Natural Heritage Network

The Natural Heritage Network comprises 75 independent heritage program organizations located in all 50 states, 10 Canadian provinces, and 12 countries and territories located throughout Latin America and the Caribbean. These programs gather, manage, and distribute detailed information about the biological diversity found within their jurisdictions. Developers, businesses, and public agencies use natural heritage information to comply with environmental laws and to improve the environmental sensitivity of economic development projects. Local governments use the information to aid in land use planning.

The Natural Heritage Network is overseen by NatureServe, the Network's parent organization, and is accessible on-line at: [http://www.natureserve.org/nhp/us\\_programs.htm](http://www.natureserve.org/nhp/us_programs.htm), which provides websites and other access to a large number of specific biodiversity centers.

## U.S. Fish and Wildlife IPaC system instructions

Use the following protocol to determine if any federally listed species or designated critical habitats under USFWS jurisdiction exist in your action area:

Enter your project specific information into the “Initial Project Scoping” feature of the Information, Planning, and Conservation (IPaC) system mapping tool, which can be found at the following location:

<http://ecos.fws.gov/ipac/>

- a. Indicate the action area<sup>1</sup> for the MS4 by either:
  - a. Drawing the boundary on the map or by uploading a shapefile.  
Select “Continue”
  
- c. Click on the “SEE RESOURCE LIST” button and on the next screen you can export a trust resources list. This will provide a list of natural resources of concern, which will include an Endangered Species Act Species list. You may also request an official species list under “REGULATORY DOCUMENTS” Save copies and retain for your records

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<sup>1</sup> The action area is defined by regulation as all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action (50 CFR §402.02). This analysis is not limited to the "footprint" of the action nor is it limited by the Federal agency's authority. Rather, it is a biological determination of the reach of the proposed action on listed species. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area.

The documentation used by a Federal action agency to initiate consultation should contain a description of the action area as defined in the Services' regulations and explained in the Services' consultation handbook. If the Services determine that the action area as defined by the action agency is incorrect, the Services should discuss their rationale with the agency or applicant, as appropriate. Reaching agreement on the description of the action area is desirable but ultimately the Services can only consult when an action area is defined properly under the regulations.

For storm water discharges or discharge related activities, the action area should encompass the following:

- The immediate vicinity of, or nearby, the point of discharge into receiving waters.
- The path or immediate area through which or over which storm water flows from the municipality to the point of discharge into the receiving water. This includes areas in the receiving water downstream from the point of discharge.
- Areas that may be impacted by construction or repair activities. This extends as far as effects related to noise (from construction equipment, power tools, etc.) and light (if work is performed at night) may reach.

The action area will vary with the size and location of the outfall pipe, the nature and quantity of the storm water discharges, and the type of receiving waters, among other factors.

Attachment B  
Mendon IPaC Trust Resources Report

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Norfolk and Worcester counties, Massachusetts



## Local office

New England Ecological Services Field Office

☎ (603) 223-2541  
📠 (603) 223-0104

70 Commercial Street, Suite 300  
Concord, NH 03301-5094

<http://www.fws.gov/newengland>

## Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.

5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service<sup>3</sup>. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data <http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The migratory birds species listed below are species of particular conservation concern (e.g. [Birds of Conservation Concern](#)) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the [AKN Histogram Tools](#) and [Other Bird Data Resources](#). To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
American Bittern <i>Botaurus lentiginosus</i> <a href="https://ecos.fws.gov/ecp/species/6582">https://ecos.fws.gov/ecp/species/6582</a>	Breeding
American Oystercatcher <i>Haematopus palliatus</i> <a href="https://ecos.fws.gov/ecp/species/8935">https://ecos.fws.gov/ecp/species/8935</a>	Breeding
Bald Eagle <i>Haliaeetus leucocephalus</i> <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Year-round
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a>	Breeding

Blue-winged Warbler	<i>Vermivora pinus</i>	Breeding
Canada Warbler	<i>Wilsonia canadensis</i>	Breeding
Fox Sparrow	<i>Passerella iliaca</i>	Wintering
Least Bittern	<i>Ixobrychus exilis</i> <a href="https://ecos.fws.gov/ecp/species/6175">https://ecos.fws.gov/ecp/species/6175</a>	Breeding
Olive-sided Flycatcher	<i>Contopus cooperi</i> <a href="https://ecos.fws.gov/ecp/species/3914">https://ecos.fws.gov/ecp/species/3914</a>	Breeding
Peregrine Falcon	<i>Falco peregrinus</i> <a href="https://ecos.fws.gov/ecp/species/8831">https://ecos.fws.gov/ecp/species/8831</a>	Breeding, Wintering
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Year-round
Prairie Warbler	<i>Dendroica discolor</i>	Breeding
Purple Sandpiper	<i>Calidris maritima</i>	Wintering
Short-eared Owl	<i>Asio flammeus</i> <a href="https://ecos.fws.gov/ecp/species/9295">https://ecos.fws.gov/ecp/species/9295</a>	Wintering
Snowy Egret	<i>Egretta thula</i>	Breeding
Upland Sandpiper	<i>Bartramia longicauda</i> <a href="https://ecos.fws.gov/ecp/species/9294">https://ecos.fws.gov/ecp/species/9294</a>	Breeding
Willow Flycatcher	<i>Empidonax traillii</i> <a href="https://ecos.fws.gov/ecp/species/3482">https://ecos.fws.gov/ecp/species/3482</a>	Breeding
Wood Thrush	<i>Hylocichla mustelina</i>	Breeding
Worm Eating Warbler	<i>Helmitheros vermivorum</i>	Breeding

#### What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?

##### Landbirds:

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

##### Atlantic Seabirds:

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAA/NCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAA/NCCOS models: the models were developed as part of the NOAA/NCCOS project: [Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#). The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the [Northeast Ocean Data Portal](#), which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

#### Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?

##### Landbirds:



LAKE

[L1UBH](#)[L2ABH](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment C  
Federally Listed Endangered and Threatened Species in  
Massachusetts

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN  
MASSACHUSETTS**

<b>COUNTY</b>	<b>SPECIES</b>	<b>FEDERAL STATUS</b>	<b>GENERAL LOCATION/HABITAT</b>	<b>TOWNS</b>
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN MASSACHUSETTS**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN MASSACHUSETTS**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

<sup>1</sup>Migratory only, scattered along the coast in small numbers

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.

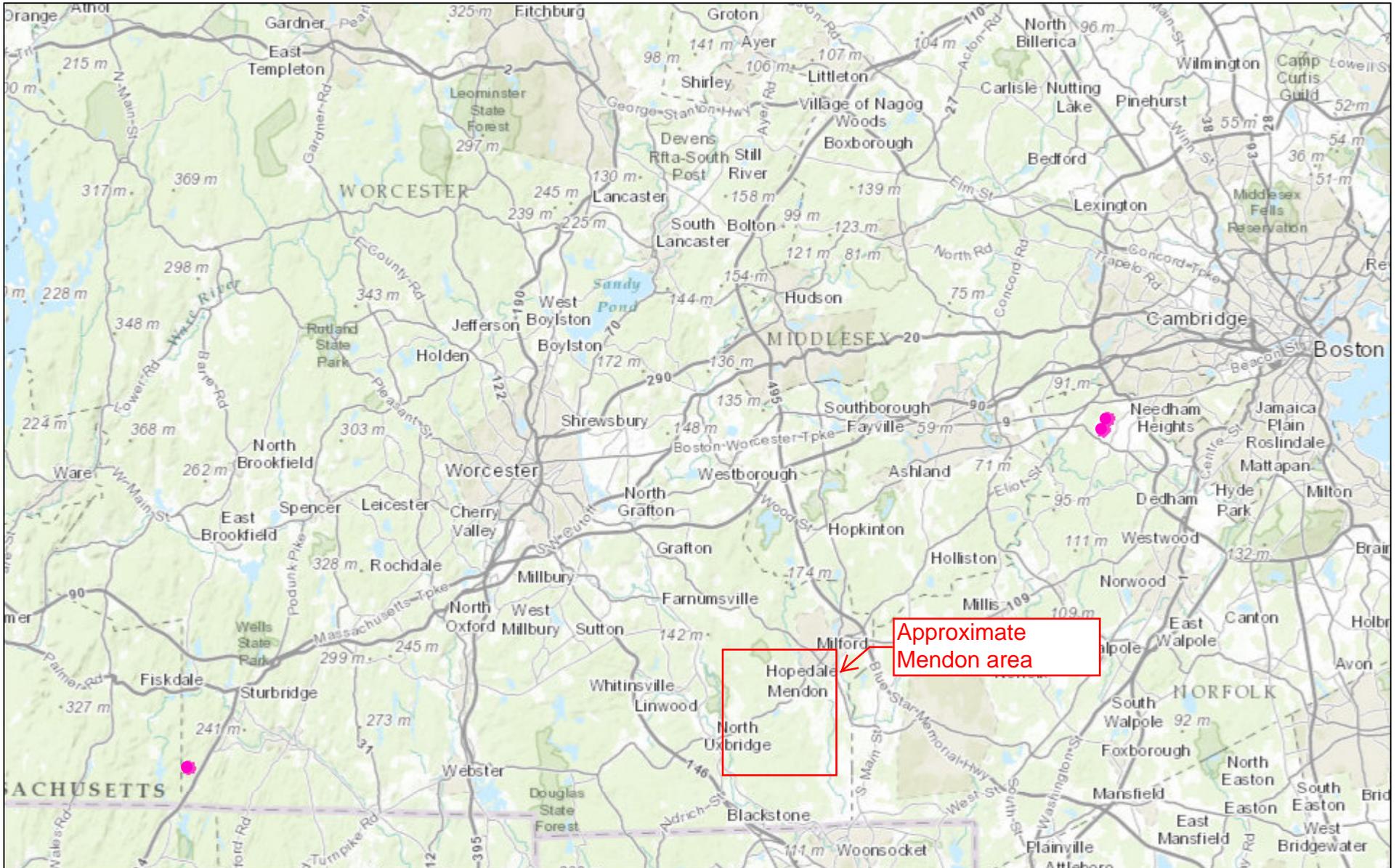
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.

-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Attachment D

Northern Long-eared Bat Location Map

# NHESP Northern Long-eared Bat Locations

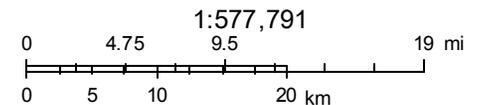


June 13, 2017

## Statewide NLEB Symbology

● Hibernaculum

■ MA Northern Long-eared Bat Winter Hibernacula (with ¼ mile buffer)



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey,

Attachment E  
U.S. Fish and Wildlife Review Letter

## **Appendix D**

### Historic Properties Eligibility Criteria Documentation

## National Historic Preservation Act Eligibility Certification

**To:** Town of Mendon  
**FROM:** Tighe & Bond  
**COPY:** Alan Tetreault  
**DATE:** August 1, 2018

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Tighe & Bond has completed the National Historic Preservation Act Eligibility Determination screening process in accordance with Part 1.9.2 and Appendix D of U.S. EPA's National Pollutant Discharge Elimination System (NPDES) General Permits from Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts (see Attachment A of this memorandum), effective July 1, 2018<sup>1</sup>, and determined that the **Town of Mendon** meets **Criterion A: The discharges do not have the potential to cause effects on historic properties.**

Tighe & Bond followed the screening process included in Appendix D. The Town of Mendon meets Criteria A by answering "Yes" to Question 1 (Is the facility an existing facility authorized by the previous permit or a new facility and the applicant is not undertaking any activity involving subsurface land disturbance less than an acre?), therefore, the Town can:

1. certify that fact in writing and file the statement with the EPA and maintain the certification as part of the records associated with the permit; and
2. certify eligibility for this permit using Criterion A on the Notice of Intent for permit coverage.

Mendon does not need to contact the state Historic Commission.

Based on this screening process, the Town of Mendon's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities will not have an effect on a property that is listed or eligible for listing on the National Register of Historic Properties (NRHP) and no further action is necessary at this time. EPA will document that the project has "no potential to cause effects" (36 CFR 800.3(a)(1)). There are no further obligations under the Section 106 regulations.

Attachment B to this memorandum includes a list of the federal- and state-listed historic areas, buildings, burial grounds, objects, and structures downloaded from the Massachusetts Cultural Resource Information System (MACRIS) that is current as of June 13, 2017. Based on review of the National Register of Historic Places website<sup>2</sup>, there are only three (3) federally listed historic places in Mendon:

- Nathan C. Aldrich House and Resthaven Chapel
- Mendon Center Historic District
- North Avenue Rural Historic District

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<sup>1</sup> Revised effective date according to 6/29/17 EPA memo from EPA Region 1 Acting Regional Administrator

<sup>2</sup> <https://www.nps.gov/nr/research/>

If the Town undertakes construction on or around a property that is listed or eligible for listing, the Town will coordinate with the State Historic Preservation Officer (SHPO) (i.e. the Massachusetts Historical Commission) by submitting a Project Notification Form and associated documentation for the project. As applicable for each project, the Town will implement measures to avoid or minimize adverse impacts on places listed, or eligible for listing, on the NRHP, including any conditions imposed by the SHPO or THPO. If the Town fails to document and implement such measures, those discharges are ineligible for coverage under EPA's Small MS4 General Permit.

J:\M\M0799 Town of Mendon Stormwater Mapping\Stormwater Compliance\M0799-009 FY17-18 NPDES\Task 1.2-NOI\NOI\Appendix D - HP\National Historic Preservation Act Eligibility Certification.docx

## Attachment 1

Appendix D of U.S. EPA's National Pollutant Discharge Elimination System (NPDES) General Permits from Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts

## **Appendix D National Historic Preservation Act Guidance**

### **Background**

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

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

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

### **Activities with No Potential to Have an Effect on Historic Properties**

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

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

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

### **Activities with Potential to Have an Effect on Historic Properties**

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

### ***Examples of Control Measures Which Involve Subsurface Disturbance***

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

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

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

### **Certification**

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

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

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

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

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

### Screening Process

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

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

*YES* - The applicant should certify that fact in writing and file the statement with the EPA. This certification must be maintained as part of the records associated with the permit.

**The applicant should certify eligibility for this permit using Criterion A on their Notice of Intent for permit coverage.** The applicant does not need to contact the state Historic Commission. Based on that statement, EPA will document that the project has “no potential to cause effects” (36 CFR 800.3(a)(1)). There are no further obligations under the Section 106 regulations.

*NO*- Go to Question 2.

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

*NO* - The applicant should certify that fact in writing and file the statement with the EPA. This certification must be maintained as part of the records associated with the permit.

**The applicant should certify eligibility for this permit using Criterion B on their Notice of Intent for permit coverage.** The applicant does not need to contact the state Historic Commission. Based on that statement, EPA will document that the project has “no potential to cause effects” (36 CFR 800.3(a)(1)). There are no further obligations under the Section 106 regulations.

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

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

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

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

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

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

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

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

## Attachment 2

Massachusetts Cultural Resource Information System (MACRIS)  
List of federal- and state-listed historic areas, buildings, burial  
grounds, objects, and structures

# Massachusetts Cultural Resource Information System

## MACRIS

### MACRIS Search Results

Search Criteria: Town(s): Mendon; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
MEN.A	Mendon Center Historic District		Mendon	
MEN.B	North Avenue Rural Historic District		Mendon	
MEN.C	Aldrich, Nathan C. House and Resthaven Chapel		Mendon	
MEN.1	Albee, Samuel House	521 Asylum St	Mendon	c 1831
MEN.2	Burr, E. House	3 Bates St	Mendon	c 1870
MEN.3	Hayward, Jetham House	6 Bates St	Mendon	c 1775
MEN.4	Newhall - Brown House	7 Bates St	Mendon	c 1898
MEN.5		12 Bates St	Mendon	c 1910
MEN.6		26 Bates St	Mendon	c 1920
MEN.7	Bates, Elias Thayer House	52 Bates St	Mendon	c 1821
MEN.8	Bates, L. House	53 Bates St	Mendon	c 1870
MEN.9		57 Bates St	Mendon	c 1775
MEN.10	Lazell, Joshua House	111 Bates St	Mendon	c 1831
MEN.909	Bellingham Road Bridge	Bellingham Rd	Mendon	1938
MEN.11	Jenks, E.H. House	10 Bellingham Rd	Mendon	c 1898
MEN.211		3 Blackstone St	Mendon	c 1940
MEN.12	Rawson - Gassett House	5 Blackstone St	Mendon	c 1831
MEN.13	Williams - Turner House	7 Blackstone St	Mendon	c 1831
MEN.212	Sunset Apartments	9 Blackstone St	Mendon	c 1970
MEN.246		10 Blackstone St	Mendon	c 1990
MEN.247		12 Blackstone St	Mendon	c 1990
MEN.14	Rawson - Gaskill Farmstead	13 Blackstone St	Mendon	c 1850
MEN.15	Wheelock House	34 Blackstone St	Mendon	c 1858
MEN.16	Gardner House	37 Blackstone St	Mendon	c 1858
MEN.17	Penniman, Andrew House	49 Blackstone St	Mendon	c 1831
MEN.18	Chapin House	88 Blackstone St	Mendon	c 1775
MEN.19	Staples, George House	143 Blackstone St	Mendon	c 1831

Inv. No.	Property Name	Street	Town	Year
MEN.20		6 Cape Rd	Mendon	c 1925
MEN.21	Bicknell, E. F. House	10 Cape Rd	Mendon	c 1870
MEN.22	Bates, Benjamin House	11 Cape Rd	Mendon	c 1831
MEN.23		16 Cape Rd	Mendon	c 1900
MEN.24	Parnell House	21 Cape Rd	Mendon	c 1831
MEN.25		35 Cape Rd	Mendon	c 1831
MEN.26	Johnson, William House	38 Cape Rd	Mendon	c 1831
MEN.28	Ballou, Sumner House	4 Elm St	Mendon	r 1855
MEN.27	Taft - Cook House	5 Elm St	Mendon	r 1855
MEN.29	Taft - Brown House	6 Elm St	Mendon	c 1820
MEN.213		8 Elm St	Mendon	c 1970
MEN.30	Knight House	8 Emerson St	Mendon	c 1840
MEN.31		10 Emerson St	Mendon	c 1920
MEN.32		16 Emerson St	Mendon	c 1920
MEN.214		18 Emerson St	Mendon	1990
MEN.215		20 Emerson St	Mendon	c 1940
MEN.33	Lesure House	22 Emerson St	Mendon	r 1850
MEN.216		26 Emerson St	Mendon	c 1980
MEN.217		10 Gaskill St	Mendon	c 1940
MEN.248	Gaskill, Albert W. Barn Complex and Farm Land	12 Gaskill St	Mendon	r 1845
MEN.218		13 Gaskill St	Mendon	c 1989
MEN.219		15 Gaskill St	Mendon	1989
MEN.220		3 George St	Mendon	c 1989
MEN.801	Quaker - Friends Cemetery	7 George St	Mendon	c 1730
MEN.802	George Cemetery	8 George St	Mendon	c 1820
MEN.34	Aldrich - Scott House	9 George St	Mendon	r 1840
MEN.221		10 George St	Mendon	c 1970
MEN.35	Smith - Williams House	12 George St	Mendon	c 1820
MEN.36	Gaskill, Micajah House	16 George St	Mendon	c 1840
MEN.222		17 George St	Mendon	c 1989
MEN.223		18 George St	Mendon	c 1940
MEN.37		19 George St	Mendon	c 1910
MEN.38	Allen - Ellis House	20 George St	Mendon	c 1820
MEN.224		22 George St	Mendon	c 1980
MEN.39	Gaskill, A. House	28 George St	Mendon	c 1840
MEN.40	Cook - Gaskill House	34 George St	Mendon	c 1830
MEN.804	Gaskill Cemetery	35 George St	Mendon	c 1750
MEN.41		Harrington St	Mendon	c 1920

Inv. No.	Property Name	Street	Town	Year
MEN.278	Cook, Olney Painter and Glaziers Shop	54 Hartford Ave East	Mendon	c 1839
MEN.42	Cook, Olney House	56 Hartford Ave East	Mendon	c 1820
MEN.43		99 Hartford Ave East	Mendon	c 1920
MEN.44		121 Hartford Ave East	Mendon	c 1898
MEN.45	Thurber, Doctor Daniel House	143 Hartford Ave East	Mendon	c 1831
MEN.46	Dewing, E. House	157 Hartford Ave East	Mendon	c 1870
MEN.47	Cook, Clark House	1 Hartford Ave West	Mendon	c 1858
MEN.48	Cook, Clark House	11 Hartford Ave West	Mendon	c 1831
MEN.49		58 Hartford Ave West	Mendon	c 1910
MEN.50	Aldrich, Luke House	91 Hartford Ave West	Mendon	c 1800
MEN.51	Wood House	101 Hartford Ave West	Mendon	c 1858
MEN.52	Spring Hill Farm	102 Hartford Ave West	Mendon	c 1858
MEN.53	Wood, Obadiah House	105 Hartford Ave West	Mendon	c 1820
MEN.54	Comstock, W. H. House	1 Hastings St	Mendon	c 1850
MEN.55	Metcalf, Dr. John G. House	3 Hastings St	Mendon	c 1831
MEN.56	Cook - Holbrook - Whiting House	4 Hastings St	Mendon	r 1840
MEN.57	Hastings, Charles C. P. House	6 Hastings St	Mendon	c 1840
MEN.58	Haywood, Ebenezer - Davenport House	7 Hastings St	Mendon	c 1820
MEN.59	Albee, Holland Bakery Worker Housing	8 Hastings St	Mendon	c 1845
MEN.60	Hastings, Seth House	10 Hastings St	Mendon	c 1820
MEN.249	Mendon Center Garden Center	11 Hastings St	Mendon	c 1900
MEN.227		14 Hastings St	Mendon	c 1970
MEN.61	Metcalf, Walter T. House	15 Hastings St	Mendon	c 1830
MEN.62	South Parish Unitarian Church Parsonage	17 Hastings St	Mendon	r 1850
MEN.250		18 Hastings St	Mendon	c 1831
MEN.63		21 Hastings St	Mendon	c 1908
MEN.64	Cook - Adams House	23 Hastings St	Mendon	c 1840
MEN.65		25 Hastings St	Mendon	c 1910
MEN.66	Wood Homestead	29 Hastings St	Mendon	r 1840
MEN.67	Staples, G. A. House	31 Hastings St	Mendon	c 1840
MEN.68	Cook - Darling House	33 Hastings St	Mendon	r 1835
MEN.273		4 Hopedale St	Mendon	c 1990
MEN.260		8 Hopedale St	Mendon	c 1990
MEN.261		12 Hopedale St	Mendon	c 1990
MEN.262		16 Hopedale St	Mendon	c 1990
MEN.69	Inman, Nathan House	Inman Hill Rd	Mendon	c 1831
MEN.209		Kinsley Ln	Mendon	c 1910
MEN.902	Memorial Square	Main St	Mendon	c 1900

Inv. No.	Property Name	Street	Town	Year
MEN.903	Meetinghouses Site Marker	Main St	Mendon	
MEN.906	French and Indian - Revolutionary War Monument	Main St	Mendon	1967
MEN.907	Founder's Park Memorial Tablet	Main St	Mendon	
MEN.917	Mendon Memorial Watering Trough	Main St	Mendon	c 1870
MEN.70	Mendon Bank	3 Main St	Mendon	1825
MEN.71	Ammidon Tavern	4 Main St	Mendon	c 1745
MEN.72	Goss - Childs House	5 Main St	Mendon	c 1831
MEN.73		6 Main St	Mendon	r 1915
MEN.74	North Congregational Church	7 Main St	Mendon	1830
MEN.75	Thayer - Metcalf House	9 Main St	Mendon	r 1810
MEN.76	Draper Company Worker Housing - Boarding House	10 Main St	Mendon	r 1910
MEN.77		11 Main St	Mendon	r 1905
MEN.226		12 Main St	Mendon	c 1920
MEN.78	Hastings Law Office - Mendon Post Office	13 Main St	Mendon	c 1820
MEN.225		14 Main St	Mendon	c 1980
MEN.79	Aldrich, W. H. House	15 Main St	Mendon	c 1834
MEN.80	Union Chapel - Taft Public Library	18 Main St	Mendon	1896
MEN.81	Harrison Hall - Mendon Town Hall	20 Main St	Mendon	1844
MEN.82	Mendon Highway Department Garage	20 Main St	Mendon	c 1940
MEN.243	Mendon Fire Station	20 Main St	Mendon	1948
MEN.83	Rawson - Smith House	23 Main St	Mendon	r 1840
MEN.84	George Homestead	24 Main St	Mendon	r 1815
MEN.85	Craig - Brown House	25 Main St	Mendon	c 1840
MEN.86		27 Main St	Mendon	r 1820
MEN.87	George House	28 Main St	Mendon	r 1840
MEN.244		29 Main St	Mendon	r 1840
MEN.88	Allen - Grow House	33 Main St	Mendon	c 1841
MEN.803	Old Mendon Cemetery	35 Main St	Mendon	c 1702
MEN.901	Wood's Civil War Memorial	Maple St	Mendon	1891
MEN.90	Mendon Post Office - Aldrich General Store	1 Maple St	Mendon	r 1833
MEN.228	U. S. Post Office - Mendon Branch	2-12 Maple St	Mendon	c 1980
MEN.91	Weatherhead House	3 Maple St	Mendon	r 1840
MEN.92	Hastings, Anna Warren House	5 Maple St	Mendon	c 1838
MEN.93	Davenport - Bartlett House	9 Maple St	Mendon	r 1850
MEN.94	Davenport, J. G. House	11 Maple St	Mendon	r 1835
MEN.95	Mendon Unitarian Church	13 Maple St	Mendon	c 1820

Inv. No.	Property Name	Street	Town	Year
MEN.96	Cook, L. House	15 Maple St	Mendon	r 1840
MEN.229		16 Maple St	Mendon	c 1940
MEN.98	Anthony, B. - Inman House	17 Maple St	Mendon	r 1840
MEN.230		18 Maple St	Mendon	c 1940
MEN.97	Allen - Scribner House	20 Maple St	Mendon	c 1838
MEN.99	Thayer - Comstock House	22 Maple St	Mendon	r 1840
MEN.100	Eames, D. - Wallahan House	23 Maple St	Mendon	r 1840
MEN.101	Hayward - Bridgedale House	24 Maple St	Mendon	r 1840
MEN.102	Swan - Wheelock House	26 Maple St	Mendon	c 1800
MEN.103	Eames - Wallahan House	28 Maple St	Mendon	c 1840
MEN.231		30 Maple St	Mendon	c 1980
MEN.104		32 Maple St	Mendon	r 1925
MEN.105		34 Maple St	Mendon	r 1925
MEN.232		36 Maple St	Mendon	c 1989
MEN.106	Hayward - Taft House	38 Maple St	Mendon	1820
MEN.89	Wheelock - George, Nathan R. House	1 Maple St Extension	Mendon	r 1865
MEN.905	First Meetinghouse Historic Site Marker	Milford Rd	Mendon	c 1910
MEN.233		1 Milford Rd	Mendon	c 1980
MEN.108	Dudley, A. House	3 Milford Rd	Mendon	c 1840
MEN.109		5 Milford Rd	Mendon	r 1925
MEN.251		7 Milford Rd	Mendon	r 1925
MEN.110		9 Milford Rd	Mendon	r 1925
MEN.234		11 Milford Rd	Mendon	c 1940
MEN.235	Mendon American Legion Hall	13 Milford Rd	Mendon	c 1965
MEN.252		15 Milford Rd	Mendon	c 1990
MEN.111	Taft House	16 Milford Rd	Mendon	r 1835
MEN.112		58 Milford Rd	Mendon	c 1920
MEN.113	Moore, Mary House	69 Milford Rd	Mendon	c 1898
MEN.114	Gardner, Thomas House	11 Millville Rd	Mendon	c 1740
MEN.115	Taft House - Homesite	40 Millville Rd	Mendon	c 1775
MEN.116	Taft House	48 Millville Rd	Mendon	c 1858
MEN.117	Wheelock House	98 Millville Rd	Mendon	c 1830
MEN.118		105 Millville Rd	Mendon	c 1858
MEN.119	Albee House	108 Millville Rd	Mendon	c 1831
MEN.120	Staples House	112 Millville Rd	Mendon	c 1858
MEN.121	Wheelock, Simeon House	116 Millville Rd	Mendon	c 1831
MEN.122	Staples, Abram House	141 Millville Rd	Mendon	c 1831
MEN.123	Staples, Edward Livingston House	146 Millville Rd	Mendon	c 1870

Inv. No.	Property Name	Street	Town	Year
MEN.124	Taft, Thomas House	153 Millville Rd	Mendon	c 1831
MEN.125	Taft, Arnold and Stephen House	166 Millville Rd	Mendon	c 1831
MEN.126	Cess House	30 Miscoe Rd	Mendon	1735
MEN.128	Taft, Elkanah House	3 Morey St	Mendon	c 1775
MEN.107	Dudley, Silas Homestead	1 North Ave	Mendon	r 1840
MEN.921	Old Post Road	5 North Ave	Mendon	c 1669
MEN.129	Doggett, Rev. Simeon House	7 North Ave	Mendon	r 1820
MEN.236		9 North Ave	Mendon	c 1940
MEN.130	Clough, Henry P. School	10 North Ave	Mendon	c 1930
MEN.237		11 North Ave	Mendon	c 1940
MEN.131	Aldrich - Wilbur House	12 North Ave	Mendon	c 1831
MEN.132		13 North Ave	Mendon	c 1898
MEN.133		15 North Ave	Mendon	r 1915
MEN.922	Old Post Road Granite Marker	17 North Ave	Mendon	
MEN.253		19 North Ave	Mendon	c 1920
MEN.134		20 North Ave	Mendon	c 1890
MEN.135	Sky Farm	21 North Ave	Mendon	c 1870
MEN.136		24 North Ave	Mendon	c 1900
MEN.137		27 North Ave	Mendon	c 1905
MEN.138	Torrey, Captain William House	43 North Ave	Mendon	c 1725
MEN.139	Aldrich, P. W. House	46 North Ave	Mendon	c 1831
MEN.140	Green, Z. - Everett, C. B. House	51 North Ave	Mendon	c 1831
MEN.141		52 North Ave	Mendon	c 1900
MEN.142		55 North Ave	Mendon	c 1925
MEN.143		56 North Ave	Mendon	c 1900
MEN.144	Cummings House	59 North Ave	Mendon	c 1858
MEN.145	Perham, Reuben House	60 North Ave	Mendon	r 1850
MEN.146		62 North Ave	Mendon	c 1930
MEN.147		63 North Ave	Mendon	c 1898
MEN.148	Davenport, Benjamin House	73 North Ave	Mendon	c 1800
MEN.149	Smith - Nelson House and Farm	85 North Ave	Mendon	c 1800
MEN.263	Mendon District #1 Schoolhouse	88 North Ave	Mendon	c 1831
MEN.264		90 North Ave	Mendon	c 1950
MEN.805		90 North Ave	Mendon	c 1800
MEN.265		91 North Ave	Mendon	c 1940
MEN.150	Quigley - Elbridge House	93 North Ave	Mendon	c 1850
MEN.266		94 North Ave	Mendon	c 1960
MEN.267		96 North Ave	Mendon	c 1950

Inv. No.	Property Name	Street	Town	Year
MEN.151	Lovell House	98 North Ave	Mendon	c 1831
MEN.268	Lovett - Quigley House and Farm	98 North Ave	Mendon	c 1870
MEN.152	Davenport, George L. House	100 North Ave	Mendon	c 1850
MEN.153	Maple Farm	101 North Ave	Mendon	c 1870
MEN.274		102 North Ave	Mendon	c 1980
MEN.269		103 North Ave	Mendon	c 1990
MEN.154	Davenport, George L. - Goss, Charles B. House	106 North Ave	Mendon	c 1800
MEN.155	Davenport, Joseph G. House	111 North Ave	Mendon	c 1820
MEN.157	Davenport, Seth House	133 North Ave	Mendon	c 1780
MEN.156	Davenport, J. House and Farm	134 North Ave	Mendon	c 1900
MEN.158	Beals, Rufus G. House and Farm	139 North Ave	Mendon	c 1900
MEN.270		143 North Ave	Mendon	c 1990
MEN.271		147 North Ave	Mendon	c 1990
MEN.127	Miscoe Springs Water Company	89 Northbridge Rd	Mendon	c 1920
MEN.159	Thayer, Otis House	9 Northbridge St	Mendon	c 1800
MEN.160	Healsing House	28 Northbridge St	Mendon	c 1930
MEN.161		39 Northbridge St	Mendon	1912
MEN.162	Wood, Grindall House	54 Northbridge St	Mendon	c 1775
MEN.163	Wood, L. House	12 Park St	Mendon	c 1858
MEN.164	Daniels, Nathan House	77 Park St	Mendon	c 1800
MEN.165	Daniels, Nathan Dairy Barn	80 Park St	Mendon	c 1920
MEN.166	Daniels, Darius House	100 Park St	Mendon	1779
MEN.167	Taft, Varville House	18 Pleasant St	Mendon	c 1831
MEN.168	Paine, Rufus House	51 Pleasant St	Mendon	c 1800
MEN.169	Taft, S. R. House	58 Pleasant St	Mendon	c 1858
MEN.170	Powers, J. House	Powers Rd	Mendon	1910
MEN.904	King Phillip's War Historic Site Marker	Providence St	Mendon	
MEN.171		3 Providence St	Mendon	c 1850
MEN.254		6 Providence St	Mendon	c 1980
MEN.255		8 Providence St	Mendon	c 1980
MEN.238		9 Providence St	Mendon	c 1980
MEN.172		11 Providence St	Mendon	c 1910
MEN.173		12 Providence St	Mendon	c 1910
MEN.174	Gaskill, Albert W. House	16 Providence St	Mendon	c 1831
MEN.175	Gaskill, Albert W. House	17 Providence St	Mendon	1906
MEN.176		27 Providence St	Mendon	c 1920
MEN.177	Coffin, Jethro House	48 Providence St	Mendon	c 1708
MEN.178	Fletcher, C. House	65 Providence St	Mendon	c 1847

Inv. No.	Property Name	Street	Town	Year
MEN.179	Cook, A. B. House	69 Providence St	Mendon	c 1858
MEN.180	Cook, W. B. House	75 Providence St	Mendon	c 1858
MEN.181	Thurber, D. House	76 Providence St	Mendon	c 1858
MEN.182	Thurber, Daniel House	84 Providence St	Mendon	c 1800
MEN.183	Southland, Joel House	95 Providence St	Mendon	c 1800
MEN.184	Aldrich, Nathan Comstock House	111 Providence St	Mendon	c 1830
MEN.275	Resthaven Chapel	111 Providence St	Mendon	c 1899
MEN.276	Seabury, Catherine Regina Garage	111 Providence St	Mendon	c 1895
MEN.277	Seabury, Catherine Regina Pump House	111 Providence St	Mendon	c 1895
MEN.923	Aldrich, Nathan C. Stone Wall	111 Providence St	Mendon	
MEN.924		111 Providence St	Mendon	1985
MEN.185	Wheeler, Windsor House	183 Providence St	Mendon	c 1800
MEN.186		203 Providence St	Mendon	c 1831
MEN.245		205 Providence St	Mendon	c 1831
MEN.187		Quisset Rd	Mendon	c 1831
MEN.188	Southwick, George House	2 Southwick St	Mendon	c 1831
MEN.189		Taft Ave	Mendon	c 1920
MEN.208		16 Taft Ave	Mendon	c 1920
MEN.190	Thayer, Elias House	11 Thayer Rd	Mendon	c 1831
MEN.191	Thayer, Cushman House	39 Thayer Rd	Mendon	c 1810
MEN.192	Nipmuck Farm	15 Thornton St	Mendon	c 1828
MEN.193	Bills House	33 Thornton St	Mendon	c 1800
MEN.194	Lundy, Peter House	Trask Rd	Mendon	c 1831
MEN.272	Lundy - Trask House and Farm	8 Trask Rd	Mendon	c 1831
MEN.195	Mowry, G. House	123 Uxbridge St	Mendon	c 1858
MEN.196	Mowry, Henry House	137 Uxbridge St	Mendon	c 1831
MEN.197		4 Washington St	Mendon	c 1920
MEN.198	Rawson - Holbrook House	5 Washington St	Mendon	r 1840
MEN.239		6 Washington St	Mendon	c 1970
MEN.199		7 Washington St	Mendon	r 1840
MEN.200	Mitchell - Wood House	8 Washington St	Mendon	r 1840
MEN.240		10 Washington St	Mendon	r 1980
MEN.241		15 Washington St	Mendon	c 1940
MEN.202	Mellen House	16 Washington St	Mendon	c 1775
MEN.256		17 Washington St	Mendon	c 1980
MEN.201	Rawson - Whiting - Congdon House	18 Washington St	Mendon	r 1840
MEN.257		20 Washington St	Mendon	c 1940
MEN.258		21 Washington St	Mendon	c 1940

Inv. No.	Property Name	Street	Town	Year
MEN.203		24 Washington St	Mendon	c 1940
MEN.204	Taft, Enos House	25 Washington St	Mendon	r 1840
MEN.205		26 Washington St	Mendon	c 1940
MEN.206		28 Washington St	Mendon	c 1940
MEN.207		31 Washington St	Mendon	r 1915

## **Appendix E**

### Reference Documents

## Pollutant Impacts on Water Quality

<b>Sediment</b>	Sediment is a common component of stormwater, and can be a pollutant. Sediment can be detrimental to aquatic life (primary producers, benthic invertebrates, and fish) by interfering with photosynthesis, respiration, growth, reproduction, and oxygen exchange in water bodies. Sediment can transport other pollutants that are attached to it including nutrients, trace metals, and hydrocarbons. Sediment is the primary component of total suspended solids (TSS), a common water quality analytical parameter.
<b>Nutrients</b>	Nutrients including nitrogen and phosphorous are the major plant nutrients used for fertilizing landscapes, and are often found in stormwater. These nutrients can result in excessive or accelerated growth of vegetation, such as algae, resulting in impaired use of water in lakes and other sources of water supply. For example, nutrients have led to a loss of water clarity in Lake Tahoe. In addition, un-ionized ammonia (one of the nitrogen forms) can be toxic to fish.
<b>Bacteria and Viruses</b>	Bacteria and viruses are common contaminants of stormwater. For separate storm drain systems, sources of these contaminants include animal excrement and sanitary sewer overflow. High levels of indicator bacteria in stormwater have led to the closure of beaches, lakes, and rivers to contact recreation such as swimming.
<b>Oil and Grease</b>	Oil and grease includes a wide array of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. Sources of oil and grease include leakage, spills, cleaning and sloughing associated with vehicle and equipment engines and suspensions, leaking and breaks in hydraulic systems, restaurants, and waste oil disposal.
<b>Metals</b>	Metals including lead, zinc, cadmium, copper, chromium, and nickel are commonly found in stormwater. Many of the artificial surfaces of the urban environment (e.g., galvanized metal, paint, automobiles, or preserved wood) contain metals, which enter stormwater as the surfaces corrode, flake, dissolve, decay, or leach. Over half the trace metal load carried in stormwater is associated with sediments. Metals are of concern because they are toxic to aquatic organisms, can bioaccumulate (accumulate to toxic levels in aquatic animals such as fish), and have the potential to contaminate drinking water supplies.
<b>Organics</b>	Organics may be found in stormwater at low concentrations. Often synthetic organic compounds (adhesives, cleaners, sealants, solvents, etc.) are widely applied and may be improperly stored and disposed. In addition, deliberate dumping of these chemicals into storm drains and inlets causes environmental harm to waterways.
<b>Pesticides</b>	Pesticides (including herbicides, fungicides, rodenticides, and insecticides) have been repeatedly detected in stormwater at toxic levels, even when pesticides have been applied in accordance with label instructions. As pesticide use has increased, so too have concerns about the adverse effects of pesticides on the environment and human health. Accumulation of these compounds in simple aquatic organisms, such as plankton, provides an avenue for biomagnification through the food web, potentially resulting in elevated levels of toxins in organisms that feed on them, such as fish and birds.
<b>Gross Pollutants</b>	Gross Pollutants (trash, debris and floatables) may include heavy metals, pesticides, and bacteria in stormwater. Typically resulting from an urban environment, industrial sites and construction sites, trash and floatables may create an aesthetic "eye sore" in waterways. Gross pollutants also include plant debris (such as leaves and lawn-clippings from landscape maintenance), animal excrement, street litter, and other organic matter. Such substances may harbor bacteria, viruses, vectors, and depress the dissolved oxygen levels in streams, lakes and estuaries sometimes causing fish kills.
<b>Vector Production</b>	Vector production (e.g., mosquitoes, flies, and rodents) is frequently associated with sheltered habitats and standing water. Unless designed and maintained properly, standing water may occur in treatment control BMP's for 72 hours or more, thus providing a source for vector habitat and reproduction (Metzger, 2002).

Source: California Stormwater Quality Association, Stormwater BMP Handbook, 2003.

**Potential pollutants likely associated with specific *municipal facilities***

Municipality Facility Activity	Potential Pollutants								
	Sediment	Nutrients	Trash	Metals	Bacteria	Oil & Grease	Organics	Pesticides	Oxygen Demanding Substances
Building and Grounds Maintenance and Repair	X	X	X	X	X	X	X	X	X
Parking/Storage Area Maintenance	X	X	X	X	X	X	X		X
Waste Handling and Disposal	X	X	X	X	X	X	X	X	X
Vehicle and Equipment Fueling			X	X		X	X		
Vehicle and Equipment Maintenance and Repair				X		X	X		
Vehicle and Equipment Washing and Steam Cleaning	X	X	X	X		X	X		
Outdoor Loading and Unloading of Materials	X	X	X	X		X	X	X	X
Outdoor Container Storage of Liquids		X		X		X	X	X	X
Outdoor Storage of Raw Materials	X	X	X			X	X	X	X
Outdoor Process Equipment	X		X	X		X	X		
Overwater Activities			X	X	X	X	X	X	X
Landscape Maintenance	X	X	X		X			X	X

*Source: California Stormwater BMP Handbook (<http://www.cabmphandbooks.com/>)(slightly modified)*

**Potential pollutants likely associated with *municipal activities***

Municipal Program	Activities	Potential Pollutants								
		Sediment	Nutrients	Trash	Metals	Bacteria	Oil & Grease	Organics	Pesticides	Oxygen Demanding Substances
Roads, Streets, and Highways Operation and Maintenance	Sweeping and Cleaning	X		X	X		X			X
	Street Repair, Maintenance, and Striping/Painting	X		X	X		X	X		
	Bridge and Structure Maintenance	X		X	X		X	X		
Plaza, Sidewalk, and Parking Lot Maintenance and Cleaning	Surface Cleaning	X	X			X	X			X
	Graffiti Cleaning	X	X		X			X		
	Sidewalk Repair	X		X						
	Controlling Litter	X		X		X	X			X
Fountains, Pools, Lakes, and Lagoons Maintenance	Fountain and Pool Draining		X					X		
	Lake and Lagoon Maintenance	X	X	X		X			X	X
Landscape Maintenance	Mowing/Trimming/Planting	X	X	X		X			X	X
	Fertilizer & Pesticide Management	X	X						X	
	Managing Landscape Wastes			X					X	X
	Erosion Control	X	X							
Drainage System Operation and Maintenance	Inspection and Cleaning of Stormwater Conveyance Structures	X	X	X		X		X		X
	Controlling Illicit Connections and Discharges	X	X	X	X	X	X	X	X	X
	Controlling Illegal Dumping	X	X	X	X	X	X	X	X	X
	Maintenance of Inlet and Outlet Structures	X		X	X		X			X
Waste Handling and Disposal	Solid Waste Collection		X	X	X	X	X	X		X
	Waste Reduction and Recycling			X	X					X
	Household Hazardous Waste Collection			X	X		X	X	X	
	Controlling Litter			X	X	X		X		X
	Controlling Illegal Dumping	X		X		X	X		X	X
Water and Sewer Utility Operation and Maintenance	Water Line Maintenance	X				X	X			
	Sanitary Sewer Maintenance	X				X	X			X
	Spill/Leak/Overflow Control, Response, and Containment	X	X			X		X		X

*Source: California Stormwater BMP Handbook (<http://www.cabmphandbooks.com/>)*

# IDDE Implementation Timeline

Effective

Date

1 yr

2 yr

3 yr

4 yr

5 yr

6 yr

7 yr

8 yr

9 yr

10 yr

Annual Report

Phase I map due

Phase II map due

Mapping

Update map w/ outfalls, receiving waters, certain other structures

Update mapping information, including catchment delineations, outfalls, and infrastructure locations (pipes, manholes, catch basins) based on information collected during catchment investigations

Initial Outfall Ranking due

Updated Outfall Ranking due

Dry Weather outfall screening and sampling

Wet weather screening of outfalls and interconnections will be performed as necessary during catchment investigations

Written catchment investigation procedure due

100% problems and catchments with sewage evidence investigated

100% catchments investigated

Perform **catchment investigations** for Problem Outfalls and outfalls/interconnections where dry weather testing indicates sewer input

Perform catchment investigations for remaining outfalls

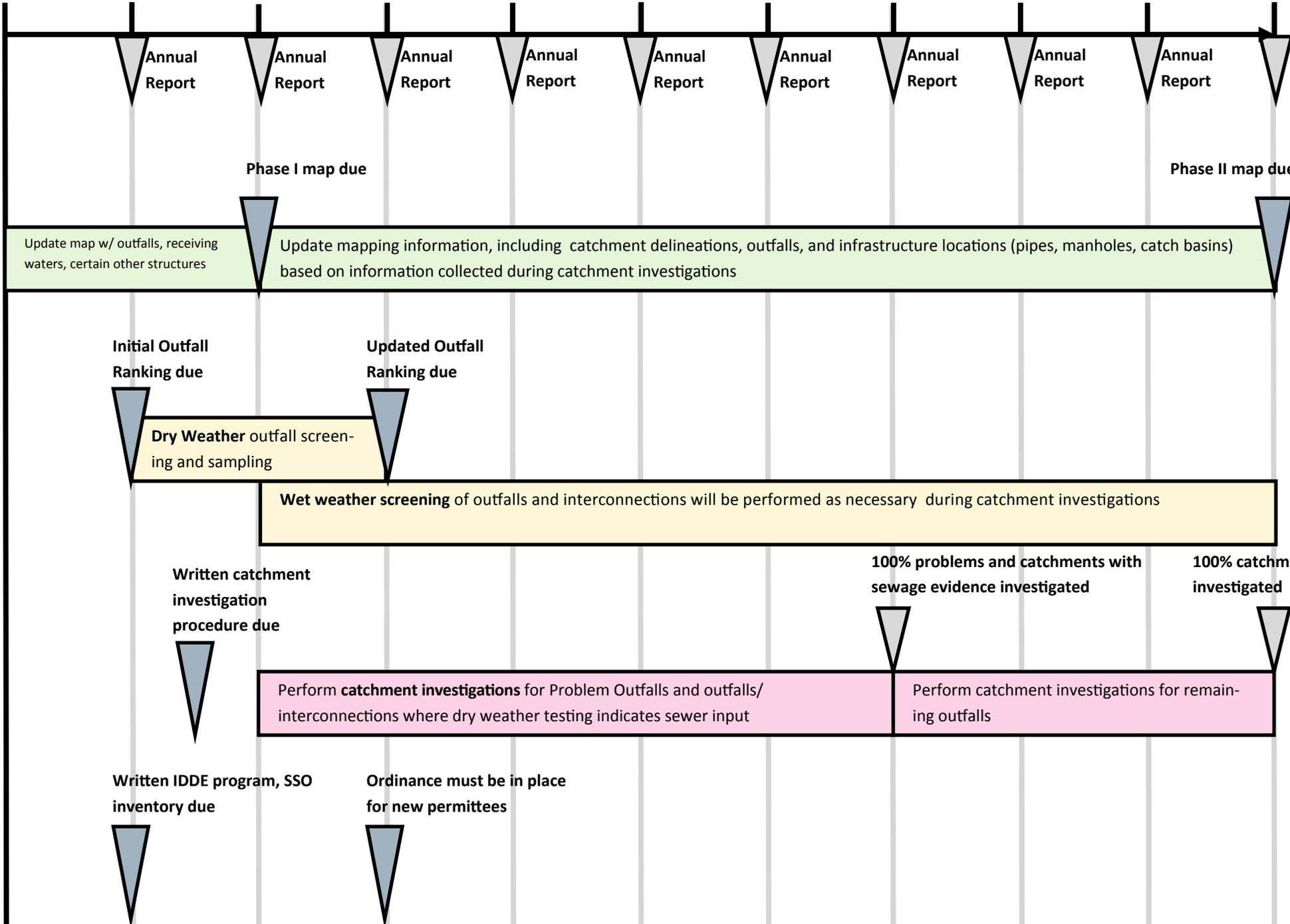
Written IDDE program, SSO inventory due

Ordinance must be in place for new permittees

Outfall Screening

Catchment Work

Written programs



# Tips for Organizing and Conducting Volunteer Clean-up Events

By: Jen Drociak –Acting Coordinator / Volunteer, Manchester Urban Ponds Restoration Program (UPRP)

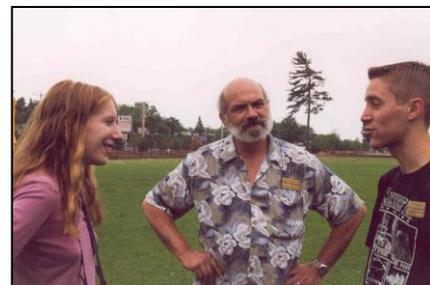
## Step 1: Plan Your Clean-Up Event

- A. Land and / or Shore? Determine the Location(s):** Determine where, in proximity to the waterbody, your group wishes to concentrate its efforts on during a clean-up event. To find heavily-littered areas, and / or areas that are prone to illegal dumping, walk along the shore, in advance, to identify location(s) for the clean-up event. Identify accessible paths along the shoreline and / or on public trails that are easy for people to walk. The location(s) may be largely determined by public (or lake / homeowner association) access points such as a public beach, boat-launch, or park. If the location is large, consider identifying smaller locations within the larger location which can be managed by individual group leaders and groups. Determining the location(s) will provide you with an idea of the footwear that may be needed for the task based upon the terrain. If the clean-up event will be located at a beach or a dry area, sandals or sneakers may be adequate. If it will be located in a wetland or mucky area, knee-boots may be appropriate. If it will be located in water, hip-boots may be most appropriate. Determining the location(s) will also provide you with a sense of how many volunteers your group is seeking for the clean-up event.



*The UPRP typically focuses clean-up efforts in the parks adjacent to the ponds by skirting around the ponds themselves. This involves differing terrain, and thus footwear. There have been occasions, however, where one or more volunteers have also used a small fishing boat to retrieve trash from the water that is too deep to obtain via hip-waders.*

- B. Obtain Landowner Permission:** Whether the location(s) of your clean-up event is / are municipally-owned or privately-owned, determine who owns the property in advance in order to obtain permission. If you do not know who the property owner is, visit your municipality's on-line assessor's website to review the tax map(s) and property card(s) associated with the area. It is typically easy to obtain permission to organize a clean-up on municipally-owned / public land. If the location(s) are on privately-owned land, talk to the land owner(s) and explain why you are organizing a clean-up in that area, along with the benefits of doing so. Obtain permission from them in writing, if you can, by considering they sign a form. Verbal permission may be adequate, however.



*The UPRP organizes clean-up events on land owned by Public Works and Parks, Recreation, and Cemetery Departments. We have not had to seek private landowner permission. We simply notify the Manchester Public Works Department and Parks, Recreation, and Cemetery Department of the dates of the clean-up events.*

- C. Determine the Task(s) at Hand:** Determine what you will request of your volunteers. Will it be the removal of trash only? If so, will it be the removal of large items only or all items including the minutia? Will it be the removal of yard waste only? Graffiti removal or other vandalism? All of the above? Determining the task(s) at hand will provide you with an idea of the supplies (and hours) you will need to perform the task(s).

*The UPRP typically removes trash only. We typically do not pick up the minutia (cigarette butts, bottle caps, etc.) due to the large volume of trash we collect and the limited amount of time and volunteers we have at each clean-up event.*



**D. Determine the Check-In Location:** Based upon the chosen location(s) of the clean-up event, consider and determine the most appropriate location for volunteers to initially gather to check in and obtain supplies, as well as to reconvene at the end of the clean-up event. This may be a kiosk, boat-launch, or specific location on a beach or in a park. Try to stay away from busy roads or areas that are difficult to access.

*The UPRP typically requests that volunteers meet in one central / well-known location such as a kiosk in a parking lot or boat-launch. We have kept the initial meeting location at each clean-up event consistent over the years.*



**E. Determine the Most Appropriate Age(s) of Your Volunteers:** Based upon the task(s) at hand, determine the most appropriate age(s) of your volunteers. Are you seeking adults only? Children? Both? Do you have tasks that all can partake in, or are the tasks age-specific?

*The UPRP generally seeks volunteers of all ages for clean-up events and encourage everyone, despite their age or ability, to participate in a manner of how they most feel comfortable.*

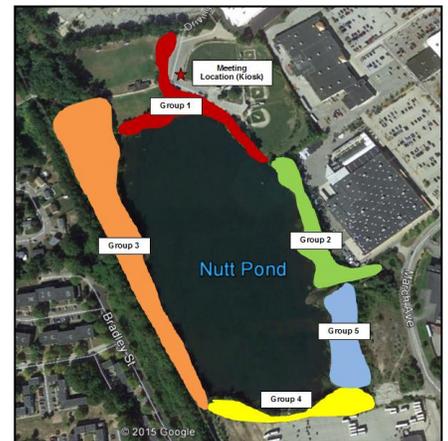


**F. Determine the Desired Number of Volunteers:** Based upon the number and location(s) that are chosen for the clean-up event, determine the desired number of volunteers to partake in the event.

*The UPRP typically splits the area adjacent to the ponds into several areas, or groups of volunteers.*

**G. Create Map(s) of the Location(s) OR Plan on Designating a “Group Leader” for Each Location:** If the location(s) is / are large enough to break into more than one group during the clean-up event, consider making aerial photographic “maps” (or using topographic maps) of each group’s area, indicating on the map the original meeting location, and the group’s start and end point.

*The UPRP has created aerial maps to use in the past. However, what we consider to be more helpful is having a “group leader” (returning volunteer or someone familiar with the area) lead a small group of other volunteers in each designated area.*



## Step 2: Schedule Your Clean-Up Event

**A. Choose a Date:** Choose a date for the clean-up event at a time of year that makes the most sense to your group. Keep in mind that while lakes and ponds have year-round residents, the majority of residents are likely seasonal and may not arrive for the season, or on or around Memorial Day weekend. Thus, a late-spring or late-fall cleanup may not be the most appropriate time as it may not garner the most volunteers. An early or mid-summer cleanup may be the most appropriate. Consider, perhaps, scheduling the event in conjunction with an annual lake association meeting or holiday barbeque. Also consider scheduling the date of the clean-up event at least a month in advance to allow time to prepare (gather supplies and recruit volunteers). Lastly, consider a rain date.



*The UPRP typically schedules annual pond and park cleanups on Saturday mornings during the last two weeks in April and the first one or two weeks in May. This is because a) this time of year is typically after the snow has melted and b) this time of year is typically before “leaf-in” (and in the case of some of these areas, this is important, as the areas are overtaken with thick stands of invasive species). We do not offer rain dates.*

- B. Choose a Time:** Determine the amount of time it may take to clean up the area(s) of your choosing. Will it take one hour? Two hours? More? This is also a factor of the number of volunteers that attend (typically the more volunteers that attend the least amount of time the clean-up will take). If you believe the area(s) may take more than two hours, it may be best to schedule a two-part clean-up event. Also consider the time of day most appropriate to your group, especially if it is scheduled in conjunction with (or before or after) another event such as an annual meeting or holiday barbecue.



*The UPRP has realized that 1 ½ - 2 hours is a sufficient amount of time to allot to clean-up events. We also realize that volunteers typically do not have the time or patience to commit to any more time in one day than that. We have also typically scheduled the clean-up events from 9:00AM to 11:00AM, with a meeting time of no later than 8:50AM. Early-morning clean-up events afford volunteers to have the remainder of the day for other things.*

### Step 3: Determine and Obtain Necessary Supplies

- A. Determine the Necessary Supplies:** Determining the task(s) at hand will determine your necessary supplies. If your clean-up event is strictly a trash removal cleanup, you may only need to obtain latex gloves and trash bags. If your clean-up event also includes yard-waste removal, you may need to obtain paper yard-waste bags, rakes and / or other tools.

*Since the UPRP clean-up events are strictly focused on trash-removal, the only supplies we must procure are latex gloves (medium sized) and trash bags. We also have a few hand-held trash-grabbers since some volunteers find them helpful in reaching difficult areas and / or to prevent excessive bending.*



- B. Obtain the Necessary Supplies:** Determine how you will obtain the necessary supplies. Does your group have a budget? Will your group be purchasing your supplies? Will your group fundraise to purchase supplies? Will your group borrow supplies, from perhaps the town or city?

*The UPRP typically obtains supplies from the Manchester Parks, Recreation, and Cemetery Department. These supplies typically only include latex gloves and trash bags, but have included, in the past, rakes, other tools and yard waste bags. We also typically have a large container of hand-sanitizer available.*

- C. Obtain a First-Aid Kit:** Consider obtaining one or more First Aid kits (for one or more groups of volunteers) in case it is needed. It is better to be proactively safe!

*The UPRP has one First-Aid kit for use.*

- D. Consider Providing Water and Snacks:** If your group has the financial means, consider providing water and snacks to your volunteers for afterwards. If your group does not have the financial means, consider soliciting donations from local establishments or having your group bake some treats, and bring a large cooler of ice water (or iced-tea) and some paper (or reusable plastic) cups.

*The UPRP does not regularly provide water and snacks to volunteers since we do not have a budget to do so. On occasion, we have been able to obtain donations for yogurt snacks from Stonyfield Farm. On occasion we have also brought or made a baked good.*



## Step 4: Determine Your Waste Disposal Options

- A. Determine Your Waste Disposal Options:** At the end of your clean-up event, determine how and where you will dispose of the trash that was collected. Is there a dumpster on site that your group has permission to use? Are there already trash and / or recycling carts on site that your group has permission to use? If not, consider contacting your municipality's Highway Department, Parks & Recreation Department, or Road Agent, at least a month in advance, who may be able to coordinate trash and / or recycling pickup from your municipality's vendor (i.e. Waste Management, Pinard, etc.). Determine when the trash and / or recycling will be picked up and what the requirements for pickup are (especially with items such as vehicular tires and batteries, etc.). In addition, consider recruiting volunteers with pick-up trucks, especially if your group is cleaning multiple areas, and trash must be stockpiled in one area at the end of the event. Similarly, if you cannot obtain trash pick-up services, volunteers with pick-up trucks, and a municipal sticker (or permission) may be able to haul the trash and / or recycling to your local landfill or transfer station for free.



*The UPRP typically sends notification of the clean-up schedule to the Manchester Public Works Director as soon as the dates are calendared. The Public Works Director, or staff, has coordinated with Manchester's solid waste collection staff to collect the trash on the Monday following the cleanup event (which have been held on Saturdays). While there have been a few times the Public Works Department has made one or more 95-gallon recycling carts available for the clean-up events, they are generally not available, and therefore, recycling is not typically sorted from other debris. All (tied / secure) bags of trash have been neatly placed in the same locations over the years; typically underneath or adjacent to the informational kiosks. Trash collected that does not fit into bags is also neatly placed adjacent to the bagged trash. We also recruit volunteers with pick-up trucks so that trash from different areas of the cleanup can be taken to one designated location at the end of the event. In addition, one of our volunteers separates steel and other scrap metal and takes it to a scrap metal recycling facility.*

## Step 5: Advertise Your Clean-Up Event / Recruit Volunteers

- A. Determine Any Project Partners:** In addition to volunteers who live around the waterbody, and any other residents of the town, determining any existing local groups or clubs that may be able to assist with the clean-up event is always helpful. Is there a local middle school, high school, or even college (if nearby) environmental club? A local chapter of the Student Conservation Association (SCA)? Any other organization, volunteer group, or club? A lot of these groups and / or clubs seek new community service projects and can help you garner additional / new volunteers.



*The UPRP has partnered with the Student Conservation Association, local high school ecology clubs, local boy-scout troops, trout-fishing clubs, geo-caching groups, and others in the past. This has helped garner additional / new volunteers.*

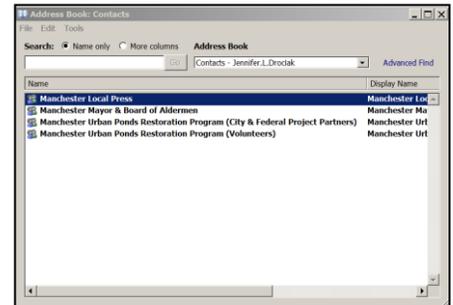
- B. Determine the Best Way(s) to Advertise Your Clean-Up Event:** Determine the target audience of volunteers and consider the best way(s) to advertise your clean-up event. Is it by e-mail? Website? Post-card? Posting of a flyer on a community bulletin board and / or kiosk? An annual lake association newsletter? An advertisement in a local newspaper? TV? Radio? facebook / social media? All of the above? Remember, printed materials and postage cost money, as typically do newspaper and radio advertisements. If your group has available funds for this, that is one thing. If not, instead of



simply placing a paid advertisement in a newspaper, try reaching out to a local news reporter to see if s/he will write a story about your cleanup (or write and submit an op-ed piece). This is usually good, free, advertisement. Also determine the most appropriate time to advertise for the clean-up event. Will you be advertising only once, or multiple times before the event?

*The UPRP has typically advertised clean-up events in the following manners: 1) The UPRP webpage, 2) The City of Manchester website "Calendar of Events", 3) the UPRP facebook page, and 4) E-newsletter / e-mail. Local newspapers are also always gracious to cover the event(s) in a story beforehand. The UPRP typically sends posts the clean-up events on the website, and sends out an e-mail approximately three weeks in advance of the cleanup. The UPRP will then send weekly e-mails.*

**C. Create an E-Mail Distribution List:** If you don't already have an e-mail distribution list, consider creating one. This may include names and e-mail addresses of lake association members, conservation commissioners, selectmen, municipal employees / department heads and others you know who may be interested. You can add to this with each clean-up event your group coordinates. If you have access to Constant Contact, Mailer, Mail Chimp, or other similar e-mail platform, this may be easier and more appropriate to use. If not, e-mail is a good starting place.



*The UPRP has an e-mail distribution list which consists of approximately 200 individuals consisting of city aldermen, city department heads, conservation commissioners, media contacts, active school groups and other environmental organizations, and former volunteers. With every e-mail sent, an option is sent to opt-out of receiving e-mails by having a name and e-mail address removed from the list. This list is updated at least twice a year.*

**D. Before You Mail, Post, (or Hit the Send Button):** Before you mail or post your flyer, or hit the send button to your e-mail distribution list, be sure to include the Who, What, Where, When, Why, and How to ensure all information is readily available. Why are you seeking volunteers? Who are you seeking as volunteers? What tasks are you seeking of volunteers? Where (general location and specific meeting location) are you seeking volunteers? When (date / time) are you seeking volunteers? Is there a rain date? How will the tasks be conducted? What should the volunteers wear or bring? What will be provided? Are you requesting an RSVP? For more information, who should they contact? Prepare your volunteers by letting them know what time to arrive, what to wear (clothes that can get dirty or wet, long pants, work gloves, boots or sturdy shoes, etc.), what to bring (sunscreen, insect repellent, water) and what to do in case of bad weather (rain date or cancellation information / phone number).



*For Example: Seeking volunteers of all ages to assist in an annual trash clean-up at Black Brook and Blodget Park in Manchester on Saturday, April 23, 2016 from 9:00AM – 11:00AM. Volunteers will partner to clean the park and skirt the edges of the brook and wetland complex to remove accumulated trash. Please dress appropriately for weather as no rain date is scheduled. Latex gloves and trash bags will be provided, but please wear knee-boots, or hip-waders if you have them. No RSVP necessary. For more information, please visit [www.manchesternh.gov/urbanponds](http://www.manchesternh.gov/urbanponds) or contact Jen Drociak at [email@gmail.com](mailto:email@gmail.com) or (603) ### - ####. We look forward to seeing you there!*

## Step 6: Conduct Your Clean-Up Event

**A. Arrive Early:** Consider arriving 15 minutes to one hour earlier than your volunteers so that you can set up at your check in location. Consider setting up the following: "Clean-Up Attendance Sheet", water and / or refreshments, first aid and safety, trash bags and clean-up supplies, organizational information (flyers, fact sheets, reports, etc.). Consider also walking around the location(s) to identify any new trash and / or safety concerns that may have accrued / arisen since your last visit.

The UPRP coordinator(s) typically meet on-site approximately 15-30 minutes in advance of volunteers to set up trash bags, latex gloves, and the "Clean-Up Attendance Sheet". We also survey the site to identify any new trash or safety hazards to relay to volunteers.

**B. Welcome Your Volunteers and Ask Them to Sign-In:**

Welcome each volunteer upon arrival and ask that they sign a "Clean-Up Attendance Sheet" so that your group may account for number of volunteers and volunteer hours contributed to the clean-up event. Consider leaving the "Clean-Up Attendance Sheet" at the check-in location for those volunteers who may have to leave (and sign out) earlier than the full allotted time.

The UPRP "Clean-Up Attendance Sheet" typically notes the location and date of the event, and has room to tally the number of volunteers, number of volunteer hours, number of bags of trash and other debris. It also has fields for volunteers to print their name, address, and e-mail, and note the time they checked in, and the time they checked out.

Manchester Urban Ponds Restoration Program 2016 Clean-Up Attendance Sheet					
Location: _____		Date: _____	Hours at Event: _____	# Volunteers: _____	# Volunteer Hours: _____
Name (Please Print)	Address	E-Mail	Time In	Time Out	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Number of Bags of Trash: _____		Other Notes: _____			

**C. Ask Volunteers to Sign a Liability Waiver and Photo-Release Form:** Trash found in a waterbody will likely be dirty, rusty, slimy, and sharp. In addition, your group may find broken glass, hypodermic needles and hazardous wastes. Heavy items should not be lifted alone. Caution is needed when handling all trash in order to avoid cuts and other injuries. Consider asking volunteers to sign a liability waiver and photo-release form. These can be two documents, or combined into one. The form should explain any dangers associated with the clean-up event and reminds volunteers to act responsibly for their own safety. The form helps protect you and your organization from potential liability if a volunteer is injured. In addition, with their permission, it allows you to use photographs taken that day. Examples of these forms can be found on-line.

**D. Introduce Yourself and Provide Opening Remarks:** Introduce yourself, thank special guests, sponsors / project partners (who have helped by providing goods or services), and volunteers. If the media is there, they may want to interview you or for you to provide a brief quote. Consider preparing remarks ahead-of-time, and allowing any special guests to also provide opening remarks to the group.

The UPRP coordinators typically introduce themselves, and thank any special guests (city aldermen, city employees, etc.), sponsors (municipal and local), and volunteers themselves.

**E. Provide Volunteers with a Brief Background / History of the Area(s):**

To acquaint new volunteers to your group / program and to the area, consider providing a brief background / history about the waterbody / area, distinguishing features, and its importance to the community. Consider showing volunteers a map of the waterbody and / or watershed. Also consider providing information such as points of interest, recent (or upcoming) restoration projects in the area, and / or information relative to water quality / monitoring, exotic species, other volunteer opportunities, etc.



Many of the UPRP volunteers are returning volunteers. However, with any new volunteers, we typically offer basic information on the program itself, as well as the watershed, inlet / outlet, history fun-facts, and any recent / upcoming restoration projects. We have fact sheets on each of our ponds on our website, which we can also direct them to for more information.

**Nutts Pond Facts**

- Namesake:** Named after a local street performer, "Comedian" George Washington Nutts.
- Location:** Drinking Park Road, off of South Willow Street in south Manchester.
- Type of Waterbody:** Natural Pond fed by Tannery Brook.
- Inlet/Outlet:** Tannery Brook, flowing into Nutts Pond to the south of Bates Depot, and emptying into the Merrimack River near the Riverway in downtown Manchester.
- Watershed Area:** 6.7 acres.
- Waterbody Size:** 16.5 acres.
- Volume of Water:** 200,000 gal.
- Average Water Depth:** 13.2 feet.
- Maximum Water Depth:** 30.0 feet.
- Shoreline Length:** 1.113 feet.
- Elevation:** 237 feet.
- Uses:** Park/Biking.
- Public Boat Launch:** (Closed, trailer or car top).
- Access:** Drinking Park adjacent to Nutts.
- Local Legend:** "Comedian" George Nutts, the street performer who teamed with the P.T. Barnum Circus show with Tom Thayer.

**The History of Nutts Pond**

Historical maps show Nutts Pond has been known by several names. In the mid 1800s, it was known as Pond Pond, but by the mid 1900s it was known as George's Pond (Pond). It was in the town of North Ferris during the 1800s, possibly a property of a local entrepreneur, "Comedian" Nutts, who lived on the land nearby and was buried near the pond.

"Comedian" Nutts  
 "Comedian" George Washington Nutts, that was born in Manchester in 1808 and was the son of a Free Baptist farmer. He died in 1880 and was buried in the North Ferris cemetery. He was a well-known figure in the town and was known for his humor and his ability to make people laugh. He was a popular figure in the town and was known for his humor and his ability to make people laugh.

Nutts Pond played a role in the town's history. It was a source of water for the town and was used for various purposes. The pond was a popular spot for recreation and was a source of pride for the town. The pond was a source of water for the town and was used for various purposes. The pond was a popular spot for recreation and was a source of pride for the town.

**Storm Pond Treatment Best Management Practices (BMP) Summary**

Storm Pond Treatment Best Management Practices (BMP) Summary

**F. Provide Necessary Supplies to Your Volunteers:** Ensure your volunteers have ample supplies for the duration of the clean-up event. If they did not bring their own work gloves, request that they take two pairs of Latex gloves (in case one pair rips), and more than one trash bag, depending on the designated location(s). If your group is also removing yard waste, provide your volunteers with rakes and lawn-waste bags. Request that they return any unused pair of gloves, trash bags, and any supplies to you at the end of the clean-up event. Consider also leaving supplies out in a designated location along with the “Clean-Up Attendance Sheet” for volunteers who may show up late.



*Many of the UPRP bring their own work gloves. We then issue two pairs of Latex gloves to each volunteer as well as multiple trash bags, depending on the specific area they will be cleaning up. We request that all unused supplies be returned at the end of the clean-up.*

**G. Provide Your Volunteers with Instructions for the Clean-Up Event:** Provide your volunteers with instructions for the clean-up event such as what they will be retrieving (large trash only, all trash, etc.) what not to pick up (hypodermic needles, cigarette butts, etc.), if they are to separate trash from recycling or not (in which case they may carry two bags at once – different colors may be helpful - one for trash and one for recycling), what is considered recyclable if they are separating recycling from trash (this differs in each community and some vendors may not accept unclean / dirty recyclables from clean-up events), etc. Also provide your volunteers with safety tips and a general schedule of the clean-up event including the location to reconvene at the end and where to place trash. Ensure everyone knows there to focus their efforts and then to stop.

*The UPRP typically only picks up large items, and does not typically separate trash from recycling, due to limited means. However, we have done so in the past and have provided volunteers with two trash bags – one for recycling, and one for trash.*

**H. Make It Fun! Play One or More Games While You’re at It!** Why not make things fun while you’re out there picking up trash? Consider playing one or more games (especially if some of the volunteers are children) such as a scavenger hunt, who can find the most interesting or unusual piece of trash, who can find the largest piece of trash, who collects the most trash, etc. Consider offering a prize and / or certificate to the winner(s) of one or more of the games you play.

*The UPRP has, for many years, asked volunteers to find the “Most Interesting or Unusual Piece of Trash” at each clean-up event. At the end of the clean-up, volunteers will place their found items in one location for “judging” by the coordinator(s) of the clean-up event. Certificates and / or prizes have been awarded to the winner(s), and photos have been taken. We have found some really interesting and unusual pieces of trash over the years, and have kept a list!*



**I. Relinquish Groups of Volunteers / Group Leader(s) to Designated Area(s):** If you are separating volunteers into more than one group for your clean-up event, relinquish the groups to their designated location(s). If you don’t have a group leader for each group, relinquish them with their maps in hand. If you have a group leader be sure to introduce the volunteers in each group to their group leader before relinquishing them to their designated location(s). Remember to consider that not all locations may need the same number of volunteers.

*The UPRP typically asks one or more returning volunteers if they would agree to be group leaders. Not all locations require the same amount of volunteers, however. This is decided based upon the area of the designated location(s), as well as the amount of trash to be removed in the designated location(s). For example, one small area along the shoreline may only require two volunteers, but a larger area in another location with a lot of trash may require 4-6 or more volunteers.*



**J. Reconvene at Initial Check-In Area at Designated Time:** After the allotted period of time has elapsed for the clean-up event, reconvene at your initial check-in area. Account for all volunteers that did not sign out early.

*The UPRP always meets at our initial check-in area. We then account for each group leader and group of volunteers (who did not sign out early) to ensure all have safely returned.*



**K. Count Full Bags of Trash (or Weigh All Trash):** Count all full bags of trash that were collected and returned. If one or more bags are returned and are not considered full, consider consolidating them to make full bags of trash. That way, your measurements of “full bags” collected for this, and any other clean-up events, are consistently measured / counted. If your group has access to a scale, you consider weighing your bags of trash, and any other trash, to account for pounds of trash collected. Another option is to ask if the vendor who is charged with collecting the trash after the event can inform your group of the weight of the collection when the truck enters the scale at the weigh-station before drop-off at the refuse facility.



*Since trash collected at UPRP clean-up events has not been weighed by a scale, and trash has been weighed by vendor truck only occasionally, to be consistent, we always count full bags at the site, and consolidate bags of trash that are returned not full in order to make full bags.*

**L. Account for and Count Other Items:** Account for and count the quantity of other items of trash collected that cannot fit into bags.

*The UPRP always accounts for and counts any trash that is collected that cannot be bagged. This typically includes vehicular tires, shopping carts, wood debris, construction debris, or any other items that have been illegally dumped.*



**M. Share the Data with Volunteers:** Once you have tallied the final numbers of bags of trash and other items collected during the clean-up event, announce them to your volunteers so they know just how much trash and other debris they removed from the area, know how important their contribution of time and efforts were, and have immediate results of their work!



**N. Tally Final Numbers on Clean-Up Attendance Sheet:** Once you have tallied everything collected, write these numbers on your “Clean-Up Attendance Sheet”.

**O. Take Photographs:** To commemorate the success of your clean-up event, take a photo of the trash collected, and of the group of volunteers who helped collect it!

*The UPRP always photographs the trash collected (in and out of bags), as well as takes a group photograph in front of or aside the trash collected.*



**P. Award a Prize, or Two, or Three:** If you played one or more games during the clean-up event, consider awarding a certificate or prize to your winner(s) and photographing them with their winning piece of trash!

*The UPRP has, for many years, asked volunteers to find the “Most Interesting or Unusual Piece of Trash” at each clean-up event. At the end of the clean-up, volunteers will place their found items in one location for “judging” by the coordinator(s) of the clean-up. Certificates and / or prizes have been awarded to the winner(s), and photos have been taken.*



**Q. Thank the Volunteers:** Before parting ways, be sure to thank your volunteers for their assistance! Encourage them to volunteer again. Be sure to individually thank any special guests (aldermen / selectmen, city employees, media, etc.).

*At the end of each clean-up event, the UPRP notes upcoming clean-up events in order to encourage volunteers to return for the next event.*



Above Left: Volunteers at the 100<sup>th</sup> Cleanup of the Manchester Urban Ponds Restoration Program.

Above Right: Cake served to volunteers at the 100<sup>th</sup> official cleanup of the Manchester Urban Ponds Restoration Program .

**R. Consider Having a Picnic / Cookout / or Lunch:** If you have the financial means, consider having a picnic / cookout / lunch afterwards to celebrate your accomplishment. Or, consider soliciting local vendors for food donations in exchange for sponsor / partnership recognition at your clean-up event. If you're not able to make or supply lunch, consider encouraging volunteers to bring a brown-bag lunch for afterwards.



From 2000 - 2005 **The Manchester Urban Ponds Restoration Program** (UPRP) was part of the Supplemental Environmental Projects Plan (SEPP) which was part of an agreement between the City of Manchester, NH Department of Environmental Services, and the US Environmental Protection Agency to address combined sewers in the City. Seven (7) waterbodies in Manchester have been evaluated and monitored for restoration potential. Specific restoration projects to meet the program's goals have also been identified, funded, and completed through this project. Since 2000, the Manchester Urban Ponds Restoration Program has organized 101 clean-up events. Over the past 15 years, 800 volunteers have spent 2,298.50 hours collecting 2,093 bags of trash! This does not include the items illegally “dumped” such as shopping carts (91), tires (388), car batteries, other car parts, construction debris, and other items. In addition, the value of volunteer time spent at these clean-ups has amounted to over \$54,000 over the past 15 years! The Manchester Urban Ponds Restoration Program was awarded an EPA “Environmental Merit Award” in 2011. More information on the Manchester Urban Ponds Restoration Program can be found by visiting [www.manchesternh.gov/urbanponds](http://www.manchesternh.gov/urbanponds).



**Jen Drociak** lives in Manchester, NH and holds a Bachelor of Science degree in Environmental Conservation from the University of New Hampshire. She is employed with the New Hampshire Department of Environmental Services where she has worked as a program specialist for the Pollution Prevention Program, a restoration specialist for the NH Coastal Program where she established a monitoring program for pre- and post-restoration projects in NH’s salt marshes, and as the Volunteer River Assessment Program Coordinator where she provided technical assistance to approximately 200 volunteers who collected water quality samples for surface water quality assessments on NH’s rivers and streams. Jen has also worked for the Wastewater Engineering Bureau as a grants management specialist and is currently working for the Land Resources Management Bureau as a compliance specialist. Since 2000, Jen has also been involved with the Manchester Urban Ponds Restoration Program, and has served as acting coordinator since 2006 where she largely coordinates annual clean-up events and water quality monitoring.

**Appendix F**  
Record Keeping

## **Appendix G**

### Plan Amendment Log

STORMWATER MANAGEMENT PLAN

AMENDMENT LOG

**Tighe&Bond**

Amend. No.	Description of the Amendment	Date of Amendment	Amendment Prepared by (Name/Signature)
1	Section 2.2.1 and 2.2.2 were updated to reflect changes in the 2018-2020 Final Integrated List of Waters for Massachusetts	June, 20, 2022	Gabrielle Belfit Tighe & Bond
2			
3			
4			
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7			
8			
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10			

## **Appendix H**

Delegation of Authority Documentation

Date:

Ms. Thelma Murphy  
U.S. Environmental Protection Agency  
5 Post Office Square, Suite 100 (OEP06-1)  
Boston, MA 02109-3912

Re: NPDES MA Small MS4 General Permit  
Delegating an "Authorized Representative"

Dear Ms. Murphy:

This letter serves to designate the Town of Mendon **Highway Surveyor** as an authorized person for signing the Stormwater Management Plan (SWMP), stormwater pollution prevention plans (SWPPPs), inspection reports, annual reports, monitoring reports, reports on training and other information required under the General Permit. This authorization cannot be used for signing a NPDES permit application (e.g., Notice of Intent (NOI)) in accordance with 40 CFR 122.22.

By signing this authorization, I confirm that the Chairman of the Board of Selectman meets the following requirements to make such a designation as set forth in Appendix B, Subparagraph 11 of the Small MS4 General Permit:

*For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).*

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

Sincerely,

Christopher Burke  
Chairman, Mendon Board of Selectman