

**CERTIFICATION**

**Authorized Representative (Optional):** All reports, including SWPPPs, inspection reports, annual reports, monitoring reports, reports on training and other information required by this permit must be signed by a person described in Appendix B, subsection 11.A or by a duly authorized representative of that person in accordance with Appendix B, subsection 11.B. If there is an authorized representative to sign MS4 reports, there must be a signed and dated written authorization.

The authorization letter is:

- Attached to this document (Delegation of Authorized Representative included in Appendix A)
  
- Publicly available at the website below

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

Printed Name: Robert E. Ward, Deputy DPW Director

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

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

## **SECTION 1**

### **PROGRAM OVERVIEW**

#### **1.1 GENERAL**

This document presents the Stormwater Management Program (SWMP) for the City of Haverhill, Massachusetts. The SWMP is based on the City's 2003 SWMP; however, has been updated to meet the requirements of the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts (2016 MS4 General Permit).

#### **1.2 BACKGROUND ON THE PHASE II PROGRAM**

In 1987, the EPA amended the Clean Water Act to require a two-phased national program to address water pollution from stormwater. Phase I rule, promulgated in 1990, addressed stormwater discharges in approximately 900 of the nation's largest cities (medium and large MS4s). The Phase II Final rule was promulgated in 1999 and was the next step after the Phase I rule. The Phase II program expanded the Phase I program by requiring additional operators of MS4s located in urbanized areas with populations of fewer than 100,000 people to obtain a NPDES permit for their stormwater discharges (small MS4s). The Phase II program requires operators of small MS4s to implement program and practices to control polluted stormwater. In Massachusetts, the General Permit is issued and administered by EPA – Region 1.

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

### **1.3 REGULATED AREA**

The 2016 MS4 General Permit only applies to the portions of the City of Haverhill that are Census designated Urbanized Areas (the cumulative areas from the 2000 and 2010 Census), which are indicated as shaded areas on the US EPA Region 1 map on the next page. The non-shaded areas are not considered urbanized, and therefore, are not covered under the 2016 MS4 General Permit.

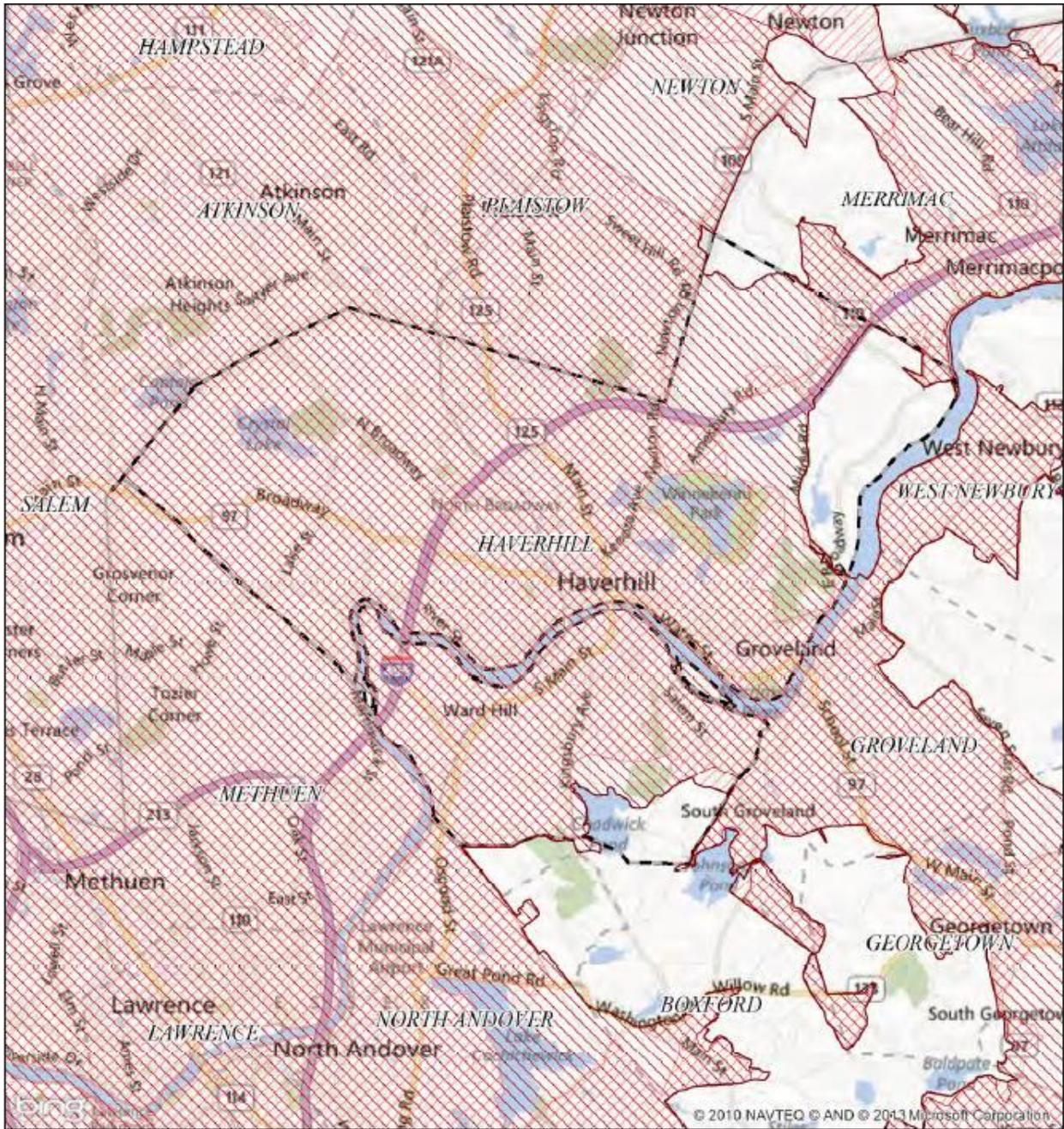
Additionally, much of the shaded areas are served by the combined sewer system, transporting both sanitary and stormwater flows to the wastewater treatment plant. As such, much of the stormwater in the City's drainage system is treated at the wastewater treatment plant before being discharged to the receiving waters; however, wet weather events where stormwater exceeds the capacity of the combined system, combined flows are diverted to one of the combined sewer overflows and discharged to the Merrimack River or the Little River. Since the City's combined sewer system is permitted under a NPDES permit for the wastewater treatment plant, the Phase II regulations do not apply to the combined portions of the sewer system. Newer areas on the outskirts of the City or recently separated areas within the downtown areas have a separate storm sewer system and are covered by the Phase II program.

The City is actively implementing a long-term combined sewer overflow (CSO) control plan to reduce combined sewer discharges to the receiving waters. The Phase I CSO Abatement Program improvements were completed in 2006 and the Phase II improvements were completed in 2017. The Phase III CSO Abatement Program is currently being developed. To date the City's CSO Abatement Program has reduced the volume of CSO discharges by an expected 50 million gallons and has eliminated or reduced the frequency of CSOs from a number of outfalls at a cost of over \$30 million.

### **1.4 STORMWATER MANAGEMENT PROGRAM**

The focus of the 2016 MS4 General Permit is the SWMP. Each permittee designs their own SWMP with the goals of reducing the discharge of pollutants from the MS4 to the maximum extent practicable and protecting water quality. As such, the SWMP describes and details the

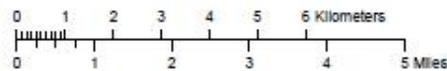
activities and measures that will be implemented by the City of Haverhill to meet the terms and conditions



**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas**

**Haverhill MA**

Regulated Area:



Town Population: **60857**  
 Regulated Population: **60231**  
 (Populations estimated from 2010 Census)



Urbanized Areas, Town Boundaries:  
 US Census (2000, 2010)  
 Base map © 2013 Microsoft Corporation  
 and its data suppliers  
 US EPA Region 1 GIS Center Map #8624, 8/9/2013

of the 2016 MS4 General Permit. This document will be updated and/or modified during the permit term as the City's activities are modified, changed or updated to meet permit conditions during the permit term. The main elements of the stormwater management program are (1) a public education program in order to affect public behavior causing stormwater pollution, (2) an opportunity for the public to participate and provide comments on the stormwater program (3) a program to effectively find and eliminate illicit discharges within the MS4 (4) a program to effectively control construction site stormwater discharges to the MS4 (5) a program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls, and (6) a good housekeeping program to ensure that stormwater pollution sources on municipal properties and from municipal operations are minimized. The six elements listed above describe the six minimum control measures outlined in the 2016 MS4 General Permit, and the City of Haverhill intends to meet the "maximum extent practicable" standard by developing and implementing best management practices (BMPs) for each of the minimum control measures:

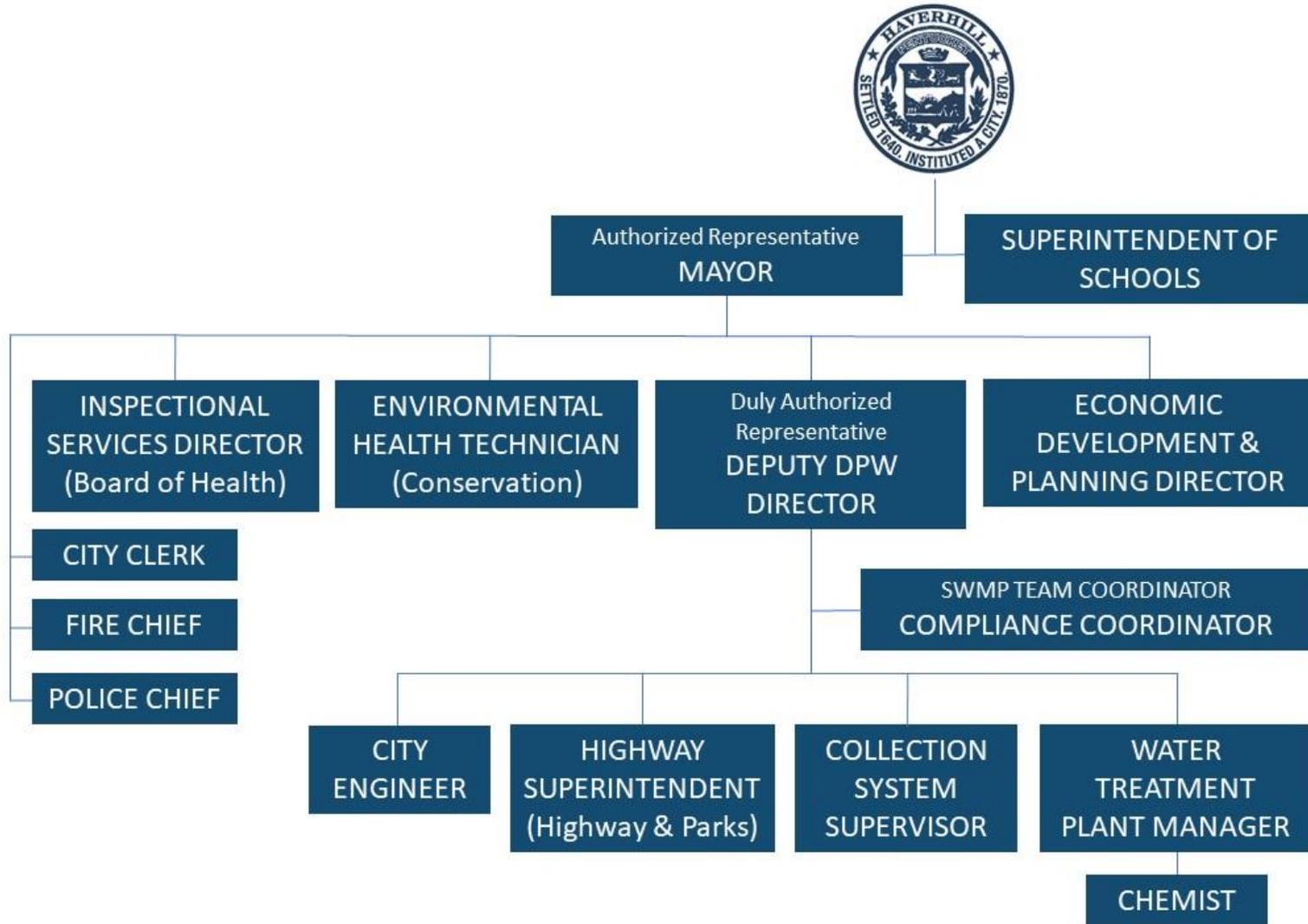
1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE) Program
4. Construction Site Stormwater Runoff Control
5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)
6. Good Housekeeping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

The BMPs are the core of the SWMP and are described in sections 2 through 7 of this document. Additional measures for water quality limited waters are described in section 8.

## **1.5 EXECUTING THE STORMWATER MANAGEMENT PROGRAM**

This document describes the stormwater best management practices that the City of Haverhill will complete during the next five years, through July of 2023, and in some cases beyond that timeframe as specified in the 2016 MS4 General Permit. Implementation of the SWMP requires coordination among several City Boards and Departments. The SWMP team is illustrated on the chart on the next page and outlined in Table 1-1.

# SWMP TEAM CHART



**TABLE 1-1**

**SWMP TEAM**

<b>Position</b>	<b>Personnel Contact Information</b>
Mayor	James Fiorentini Mayor's Office (978) 374-2300 <a href="mailto:mayor@cityofhaverhill.com">mayor@cityofhaverhill.com</a>
Deputy DPW Director	Robert Ward Department of Public Works (978) 374-2382 <a href="mailto:rward@haverhillwater.com">rward@haverhillwater.com</a>
Compliance Coordinator	Jesse Middleton Wastewater Department (978) 374-2382 <a href="mailto:jamiddleton@haverhillwater.com">jamiddleton@haverhillwater.com</a>
City Engineer	John Pettis III, PE Engineering (978) 374-2335 <a href="mailto:jpettis@cityofhaverhill.com">jpettis@cityofhaverhill.com</a>
Highway Superintendent	Michael Stankovich Department of Public Works (978) 374-2360 <a href="mailto:highway@cityofhaverhill.com">highway@cityofhaverhill.com</a>
Collection System Supervisor	Paul Jessel (interim) Wastewater Department (978) 374-2382 <a href="mailto:cprescott@haverhillwater.com">cprescott@haverhillwater.com</a>
Water Treatment Plant Manager	John D'Aoust Water Department (978) 374-2385 <a href="mailto:jdaoust@haverhillwater.com">jdaoust@haverhillwater.com</a>
Chemist	Mary D'Aoust Water Department (978) 374-2385 <a href="mailto:mdaoust@haverhillwater.com">mdaoust@haverhillwater.com</a>

<b>Position</b>	<b>Personnel Contact Information</b>
City Clerk	Linda Koutoulas City Clerk Office (978) 374-2312 <a href="mailto:lkoutoulas@cityofhaverhill.com">lkoutoulas@cityofhaverhill.com</a>
Inspectional Services Director	Richard MacDonald Health & Inspection Services Department (978) 374-2325 <a href="mailto:rmacdonald@cityofhaverhill.com">rmacdonald@cityofhaverhill.com</a>
Environmental Health Technician	Robert Moore, Jr. Conservation Department (978) 374-2334 <a href="mailto:rmoore@cityofhaverhill.com">rmoore@cityofhaverhill.com</a>
Economic Development & Planning Director	William Pillsbury Economic Development & Planning Department (978) 374-2330 <a href="mailto:wpillsbury@cityofhaverhill.com">wpillsbury@cityofhaverhill.com</a>
Superintendent of Schools	Margaret Marotta Education Department (978) 374-3405 <a href="mailto:superintendent@haverhill-ps.org">superintendent@haverhill-ps.org</a>
Fire Chief	William Laliberty Fire Department (978) 373-8460 <a href="mailto:wlaliberty@haverhillfire.com">wlaliberty@haverhillfire.com</a>
Police Chief	Alan DeNaro Police Department (978) 373-1212 <a href="mailto:policechief@haverhillpolice.com">policechief@haverhillpolice.com</a>

## **1.6 RELIANCE ON ANOTHER ENTITY FOR SATISFYING ONE OR MORE OF THE MINIMUM CONTROL MEASURES**

The City of Haverhill may rely on other entities (such as a non-profit organization or regional stormwater coalition) to help perform one or more of the BMPs included in the SWMP. Once an arrangement is established it may be appropriate for entities to consider a memorandum of understanding or a legal agreement that outline the individual responsibilities of each party; however, the City remains ultimately responsible for permit compliance.

BMPs included in the Notice of Intent (NOI) become a part of the required stormwater management program, even if the BMPs are administered by an outside group. If the outside group becomes unable to continue administering the program, the City is still responsible for compliance with the permit terms. EPA and Massachusetts Department of Environmental Protection (DEP) will allow adjustments in the SWMP, so the City may be able to replace a failing program with another one administered by the municipality. BMPs that will be implemented by another entity to satisfy permit obligations, will be specified in the annual report, including a description of what the obligations are.

## **1.7 EXISTING STORMWATER PROGRAMS IN HAVERHILL**

The City of Haverhill has existing stormwater programs and BMPs that can be used to help fulfill portions of the Phase II requirements. These include:

- Public education and outreach – signage at many of the existing stormwater and CSO outfalls around the City, stormwater brochures, stormwater webpage, and catch basin labeling (“No Dumping – Only Rain in the Drain”).
- Public participation – twice a year household hazardous waste collection days and monthly motor oil collection days, curbside leaf litter collection twice a year.
- IDDE – an extensive IDDE program, including GIS mapping, legal authority, and dry-weather outfall inspections.
- Construction site runoff control – receiving public comment on local construction projects and review/approval of a SWMP for projects under conservation commission jurisdiction.

- Pollution prevention/good housekeeping – street sweeping, catch basin cleaning, minimizing salt usage, properly storing salt, and providing training for public employees.

## **1.8 SMALL MS4 AUTHORIZATION**

The NOI for coverage under the Small MS4 General Permit was submitted on October 1, 2018 with additional information provided in June of 2019. A copy of the NOI is included in Appendix B of this SWMP. A copy of the NOI can also be found on the City of Haverhill’s website at the following address:

[https://www.cityofhaverhill.com/departments/storm\\_water\\_program/index.php](https://www.cityofhaverhill.com/departments/storm_water_program/index.php)

As of June of 2019, authorization to discharge had not be granted. A copy of the Authorization Letter will be added to Appendix B of this SWMP, when it is received. A copy of the Authorization Letter will also be posted on the City of Haverhill’s website at the following address:

[https://www.cityofhaverhill.com/departments/storm\\_water\\_program/index.php](https://www.cityofhaverhill.com/departments/storm_water_program/index.php)

## **1.9 ELIGIBILITY: ENDANGERED SPECIES AND HISTORIC PROPERTIES**

The Phase II rule prohibits stormwater discharges or discharge-related activities that “are likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the Endangered Species Act (ESA) or result in adverse modification or destruction of habitat that is designated as critical under the ESA.” The rule goes on to prohibit discharges that jeopardize essential fish habitats, adversely affect properties listed or eligible for listing on the National Register of Historic Places or that cause or contribute to instream exceedances of water quality standards. If a municipality were not able to meet these requirements, they would need to apply for the more stringent individual permit, rather than the general permit. The City of Haverhill meets eligibility requirements for the general permit, as detailed below.

### **1.9.1 Endangered Species Act**

The City of Haverhill has completed the screenings for threatened or endangered species and designated critical habitat within the regulated MS4 area in accordance with the procedures outlined in Appendix C of the 2016 MS4 General Permit. The City certified Endangered Species

Act (ESA) Eligibility under Criterion C on the NOI submitted to EPA, meaning that the effect of the stormwater discharge and discharge related activities on listed species and critical habitat have been evaluated, and based on those evaluations, a determination has been made by EPA, or by the applicant and affirmed by EPA, that the stormwater discharges and discharge related activities will have “no effect” on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the United States Fish and Wildlife Service. The Official Species List from the USFWS is included in Appendix C, which includes species: northern long-eared bat (threatened). Stormwater discharges from the MS4 and discharge-related activities are not likely to impact the hibernacula (e.g. caves) of the northern long-eared bat; however, if tree removal is necessary for required system maintenance, tree removal should not be conducted during June 1 through July 31 to avoid incidental take of the northern long-eared bat.

### **1.9.2 Historic Places**

The City of Haverhill has completed the screening for historic properties within the regulated MS4 area in accordance with the procedures outlined in Appendix D of the 2016 MS4 General Permit. The City certified National Historic Preservation Act (NHPA) Eligibility under Criterion A on the NOI submitted to EPA, meaning that stormwater discharges and allowable non-stormwater discharges do not have the potential to have an effect on historic properties and the City is not constructing or installing stormwater control measures that cause less than one acre of subsurface disturbance.

It should be noted that the proper consultations and updates to the SWMP related to permit compliance must be conducted for construction projects less than one acre (where a Construction General Permit (CGP) would not be obtained). Construction projects equal to or greater than an acre require coverage under the CGP, which would require its own endangered species and historic preservation determination.

## **1.10 RECEIVING WATERS AND PRIORITY RESOURCE AREAS**

All receiving waters, impairments, and number of outfalls discharging to each waterbody segments are outlined in Table 1-2. It should be noted that in the City’s NOI, the receiving

waters called “Woods” with 215 outfalls and “Detention Pond Inlets” with 57 outfalls were included. “Woods” included areas where outfalls discharged directly to a buffer or wooded area and “Detention Pond Inlets” described detention basins receiving stormwater discharges. Since the corresponding outfalls do not meet the definition of “outfall” per the 2016 MS4 General Permit, they are not included in Table 1-2.

The following resource areas should be considered a priority when developing and implementing the stormwater management program:

- Public water supplies
- Public recreational waters
- Outstanding Resource Waters (ORWs, as designated in 314 CMR 4.00)
- Rivers, ponds, and lakes that are on the 303(d) list of impaired waters
- Coldwater fishery river segments as identified in 314 CMR 4.00

Outstanding resource watersheds that are Class A Public Water Supplies located in the City of Haverhill include:

- Millvale Reservoir (Public Water Supply watershed, PWS Source ID: 3128000-05S)
- Kenoza Lake (Public Water Supply watershed, PWS Source ID: 3128000-01S)
- Crystal Lake (Public Water Supply watershed; PWS Source ID: 3128000-03S)
- Chadwick Pond (Public Water Supply watershed, PWS Source ID: 3128000-04S)
- Lake Pentucket (Public Water Supply watershed, PWS Source ID: 3128000-07S)

Public recreational areas include Lake Saltonstall (Plugs Pond) Swimming and Picnic Area, Winnekenni Park, and Riverside Park (adjacent to the Merrimack River). Winnekenni Park is a City conservation area and includes Kenoza Lake, which is part of the City’s primary water supply, as well as the Winnekenni Basin and Lake Saltonstall (Plugs Pond).

The following receiving waters are listed on the Massachusetts 2014 List of Impaired Waters (303d list):

- Creek Brook (MA84A-37)
- Kenoza Lake (MA84028)
- Lake Pentucket (MA84051)

- Lake Saltonstall (Plug Pond) (MA84059)
- Little River (MA84A-09)
- Merrimack River (Downstream of Little River) (MA84A-05)
- Merrimack River (Upstream of Little River) (MA84A-04)

There are no EPA-approved Total Maximum Daily Loads (TMDLs) for these waterbodies; however, there is a Draft Pathogen TMDL for the Merrimack River watershed. Since there are no “approved TMDLs”, the City is not subject to the requirements of Appendix F, part A of the 2016 MS4 General Permit.

The City will generally address these impaired waters through their stormwater BMPs, including, but not limited to:

- Public education BMPs,
- stenciling of catch basins near sensitive receptors,
- ordinances for erosion and sediment control plans, plan review, and runoff control in new development and redevelopment,
- mapping and dry weather screening of outfalls,
- catch basin cleaning, and
- street sweeping.

Specific to waterbodies impaired by bacteria and phosphorus, the City will address these impairments by implementing the additional measures outlined in section 8 (TMDLs and Water Quality Limited Waters) of the SWMP.

There are no Coldwater fishery river segments in the City of Haverhill.

**TABLE 1-2  
RECEIVING WATERS**

Waterbody that receives flow from the MS4 and segment ID, if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen / DO Saturation	Nitrogen	Oil & Grease / PAH	Phosphorus	Solids / TSS / Turbidity	E.coli	Enterococcus	Other pollutant(s) causing impairments
Beaver Pond	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Buswell Brook	12	<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"/>	
Creek Brook (MA84A-37)	8	<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"/>	
Crystal Lake Stream	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
East Meadow River (Downstream of Millvale Reservoir)	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fernside Brook	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fishing Brook	6	<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"/>	
Frye Pond	3	<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"/>	
Kenoza Lake (MA84028)	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"/>	Mercury in Fish Tissue
Lake Pentucket (MA84051)	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mercury in Fish Tissue
Lake Saltonstall (Plug Pond) (MA84059)	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mercury in Fish Tissue
Little River (MA84A-09)	23	<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"/>	
Merrimack River (Downstream of Little River) (MA84A-05)	81	<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 checked="" type="checkbox"/>	PCB in Fish Tissue

Waterbody that receives flow from the MS4 and segment ID, if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen / DO Saturation	Nitrogen	Oil & Grease / PAH	Phosphorus	Solids / TSS / Turbidity	E.coli	Enterococcus	Other pollutant(s) causing impairments
Merrimack River (Upstream of Little River) (MA84A-04)	33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PCB in Fish Tissue
Peabody Brook	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"/>	
Smiley Brook	2	<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"/>	
Snow Brook	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"/>	
Tilton Swamp	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"/>	
West Meadow Brook	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"/>	
Winnekenni Basin	6	<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"/>	
Unnamed Tributary	160	<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"/>	
<b>Total Outfalls</b>	<b>367</b>										

## SECTION 2

### MCM 1: PUBLIC EDUCATION AND OUTREACH

Minimum Control Measure (MCM) 1, Public Education and Outreach, requires the City to educate its residents about the impacts of their activities on stormwater and the impact of polluted stormwater discharges on water quality. Educating the public about the importance of stormwater management can help lead to greater support for and compliance with the SWMP. The objective of MCM 1 is to “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 the pollutants in stormwater are reduced”.

The BMPs selected are a combination of existing activity as well as new BMPs that have been added to round out the City’s program. These BMPs will provide information to the public through print, electronic media, and personal contact with City staff, thus reinforcing the message that residents can protect the quality of stormwater with their own actions.

#### **BMP #1-1: UPDATE STORMWATER WEBSITE**

*Description:* Maintain and continue to update the City of Haverhill’s Stormwater webpage with information related to the implementation of the SWMP. All public education materials will be posted on the Stormwater webpage; however, the targeted audience for the webpage is residents. The Stormwater webpage is located at this following web address:

[https://www.cityofhaverhill.com/departments/storm\\_water\\_program/index.php](https://www.cityofhaverhill.com/departments/storm_water_program/index.php)

*Target Audience:* Residents

*Measurable Goal:* Number of page views.

*Schedule:* Begin BMP implementation in 2019.

*Responsible Department/Parties:* Wastewater

#### **BMP #1-2: DISTRIBUTE GENERAL RESIDENTIAL BROCHURE**

*Description:* Provide residents with a copy of the City’s brochure titled “Haverhill Citizen’s Guide to Preventing Stormwater Pollution”. The brochure will be made available at various

public places throughout the City, including City Hall, and will be posted on the City's Stormwater webpage. The City's DPW social media accounts will also be utilized to distribute the public education message.

*Target Audience:* Residents

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2020.

*Responsible Department/Parties:* Wastewater

### **BMP #1-3: DISTRIBUTE POLLUTION PREVENTION BROCHURE**

*Description:* Provide businesses, institutions, and commercial facilities with a pollution prevention brochure. The brochure will be made available at various public places throughout the City and posted on the City's Stormwater webpage. The City's DPW social media accounts will also be utilized to distribute the public education message.

*Target Audience:* Business, institutions, and commercial facilities

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2020.

*Responsible Department/Parties:* Wastewater

### **BMP #1-4: DISTRIBUTE LOW IMPACT DEVELOPMENT (LID) BROCHURE**

*Description:* Provide developers (construction) with a copy of a brochure that highlights principles and/or technologies of LID. The brochure will be made available during the application process and be available at City Hall and on the City's Stormwater webpage. The City's DPW social media accounts will also be utilized to distribute the public education message, as appropriate, to distribute the public education message.

*Target Audience:* Developers (construction)

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2020.

*Responsible Department/Parties:* Engineering, Conservation Commission

### **BMP #1-5: DISTRIBUTE INDUSTRIAL FACILITIES BROCHURE**

*Description:* Provide industrial facilities with a copy of a proper storage of industrial materials brochure. The brochure will be distributed via a mailing to all industrial facilities and will be available on the City's Stormwater webpage. The City's DPW social media accounts will be utilized, as appropriate, to distribute the public education message.

*Target Audience:* Industrial facilities

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2020.

*Responsible Department/Parties:* Wastewater

### **BMP #1-6: DISTRIBUTE PET WASTE DISPOSAL BROCHURE**

*Description:* Annually provide residents with a copy of a pet waste disposal brochure when they register their dogs. The brochure will also be posted on the City's Stormwater webpage, and the City's DPW social media accounts will be utilized, as appropriate, to distribute the public education message.

*Target Audience:* Residents

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2021.

*Responsible Department/Parties:* Wastewater

### **BMP #1-7: DISTRIBUTE PROPER OPERATIONS AND MAINTENANCE GROUNDS BROCHURE**

*Description:* Provide businesses, institutions, commercial, and industrial facilities with a copy of a proper operations and maintenance grounds brochure. The brochure will be made available at various public places throughout the City and/or distributed via a mailing. The brochure will also be available on the City's Stormwater webpage, and the City's DPW social media accounts will be utilized, as appropriate, to distribute the public education message.

*Target Audience:* Businesses, institutions, commercial, and industrial facilities

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2021.

*Responsible Department/Parties:* Wastewater

### **BMP #1-8: DISTRIBUTE EPA CONSTRUCTION GENERAL PERMIT BROCHURE**

*Description:* Provide developers (construction) with a copy of a EPA Construction General Permit brochure. The brochure will be made available during the application process and be available at City Hall and on the City's Stormwater webpage. The City's DPW social media accounts will also be utilized to distribute the public education message, as appropriate.

*Target Audience:* Developers (construction)

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2021.

*Responsible Department/Parties:* Engineering/Conservation Commission

### **BMP #1-10: PROVIDE DISPOSAL OF LEAF LITTER POSTER/BROCHURE**

*Description:* Annually, in the fall, provide the general public with information regarding the proper disposal of leaf litter. The poster/brochure will be displayed/made available at various locations throughout the City, including the DPW as well as available on the City's Stormwater webpage. The City's DPW social media accounts will be utilized, as appropriate, to distribute the public education message.

*Target Audience:* Residents and businesses

*Measurable Goal:* Number of page views, posters hung up, or brochures handed out.

*Schedule:* Begin BMP implementation in 2021.

*Responsible Department/Parties:* Wastewater

### **BMP #1-11: DISTRIBUTE GRASS CLIPPINGS AND FERTILIZER BROCHURE**

*Description:* Annually, in the spring, provide residents, businesses, institutions, and commercial facilities with a copy of a grass clippings and fertilizer brochure. The brochure will be made available at various public places throughout the City and posted on the City's Stormwater webpage. The City's DPW social media accounts will also be utilized to distribute the public education message.

*Target Audience:* Residents, business, institutions, and commercial facilities

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2021.

*Responsible Department/Parties:* Wastewater

**BMP #1-12: DISTRIBUTE SEPTIC SYSTEM MAINTENANCE BROCHURE**

*Description:* Utilize existing septic system maintenance information to encourage septic system owners to properly maintain their septic systems. The brochure will be made available at various public places throughout the City and posted on the City’s Stormwater webpage. The City’s DPW social media accounts will also be utilized to distribute the public education message.

*Target Audience:* Residents

*Measurable Goal:* Number of page views or brochures handed out.

*Schedule:* Begin BMP implementation in 2019.

*Responsible Department/Parties:* Wastewater

## SECTION 3

### MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION

Minimum Control Measure (MCM) 2, Public Involvement and Participation, requires the City to promote public involvement and participation in implementing the SWMP. To comply with MCM 2, the City must also comply with applicable state and local public notice requirements. The objective of MCM 2 is to “provide opportunities to engage the public to participate in the review and implementation of the [City’s] SWMP”.

The BMPs selected are a combination of long-standing activities as well as newer activities. These BMPs will get the public involved in addressing stormwater quality and give the public a personal stake in the environmental health of the City.

#### **BMP #2-1: SWMP REVIEW AND ANNUAL PUBLIC COMMENT PERIOD**

*Description:* Provide the public with the opportunity to review and provide comment on the SWMP.

*Measurable Goal:* Allow annual review of and comment on the SWMP by posting the SWMP on the City’s Stormwater webpage.

*Schedule:* Begin BMP implementation in 2019.

*Responsible Department/Parties:* Wastewater

#### **BMP #2-3: MOTOR OIL COLLECTION DAYS**

*Description:* Provide the public with the opportunity to properly dispose of used motor oil.

*Measurable Goal:* Hold monthly oil collection days on the last Saturday of the month from September through June of each year.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Highway

#### **BMP #2-4: HOUSEHOLD HAZARDOUS WASTE DAY**

*Description:* Provide the public with the opportunity to properly dispose of household hazardous waste.

*Measurable Goal:* Hold household hazardous waste days twice a year.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

#### **BMP #2-5: STORMWATER HOTLINE**

*Description:* Provide the public with a hotline number to report concerns or to ask questions regarding stormwater.

*Measurable Goal:* Maintain the public hotline number (978-374-3224) as well as the hotline email address ([Stormwater@cityofhaverhill.com](mailto:Stormwater@cityofhaverhill.com)); track calls and emails received and review annually.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Conservation Commission

#### **BMP #2-6: STORMWATER STENCILING/LABELING PROGRAM**

*Description:* Continue stormwater stenciling/labeling program.

*Measurable Goal:* Stencil/label approximately 50 catch basins per year.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

## SECTION 4

### MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Minimum Control Measure (MCM) 3, Illicit Discharge Detection and Elimination, requires the City of Haverhill to map its storm drain system network and eliminate illicit connections into the storm drain system. The objective of MCM 3 is to “implement an IDDE program to systematically find and eliminate illicit sources on non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges”. The City amended Chapter 208 of the City Code (Sewers and Drains) in February of 2017 to prohibit illicit discharges to the MS4, identify an enforcement authority, and identify penalties for non-compliance.

The selected BMPs include activities specifically required by the regulations as well as long-standing activities that meet the intent of the rule. These BMPs will provide the City of Haverhill with the methods and mean to track and eliminate illicit discharges to the stormwater system. The City’s IDDE program is outlined in the “Illicit Discharge Detection and Elimination (IDDE) Manual,” that was developed in coordination with CDM-Smith in January of 2018. The IDDE manual and subsequent revisions are incorporated into the SWMP by reference (under separate cover). All supporting documentation related to the IDDE program, including that for BMPs #3-1 through BMP #3-9, is maintained separate from the SWMP. The IDDE Manual is posted on the City’s Stormwater webpage at the following web address:

[https://www.cityofhaverhill.com/departments/storm\\_water\\_program/index.php](https://www.cityofhaverhill.com/departments/storm_water_program/index.php)

#### **BMP #3-1: SSO INVENTORY**

*Description:* Develop an SSO inventory in accordance with permit conditions.

*Measurable Goal:* Complete within one year of effective date of permit (by July 1, 2019).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #3-2: STORM SEWER SYSTEM MAP**

*Description:* Continue to develop and update map during IDDE program implementation.

*Measurable Goal:* Update storm sewer system map (Phase I) within two years of the effective date of the permit (by July 1, 2020) and complete full system map (Phase II) within 10 years of effective date of the permit (by July 1, 2028).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #3-3: WRITTEN IDDE PROGRAM**

*Description:* Develop written IDDE program.

*Measurable Goal:* Complete within one year of the effective date of the permit (by July 1, 2019) and update as required.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #3-4: IMPLEMENT IDDE PROGRAM**

*Description:* Implement catchment investigations according to program and permit conditions.

*Measurable Goal:* Complete 10 years after the effective date of the permit (by July 1, 2029) and update as required.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #3-5: EMPLOYEE IDDE TRAINING**

*Description:* Train employees on IDDE implementation.

*Measurable Goal:* Annually provide training to all employees involved in the IDDE program.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #3-6: DRY WEATHER SCREENING**

*Description:* Conduct dry weather outfall screening in accordance with outfall screening procedure and permit conditions.

*Measurable Goal:* Complete three years after the effective date of the permit (by July 1, 2021).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #3-7: WET WEATHER SCREENING**

*Description:* Conduct wet weather screening in accordance with outfall screening procedures and permit conditions.

*Measurable Goal:* Complete 10 years after the effective date of the permit (by July 1, 2029).

*Schedule:* Begin BMP implementation in 2020.

*Responsible Department/Parties:* Wastewater

### **BMP #3-8: ONGOING SCREENING**

*Description:* Conduct ongoing dry weather and wet weather screening, as necessary.

*Measurable Goal:* Complete ongoing outfall screening upon completion of IDDE program.

*Schedule:* Once every five years, after completion of all catchment investigations and illicit discharge removal and confirmation (if necessary).

*Responsible Department/Parties:* Wastewater

### **BMP #3-9: UPDATE GIS**

*Description:* Continue to update GIS mapping as new structures are found in the field or as errors are identified.

*Measurable Goal:* Reduction in errors identified in the field.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

## SECTION 5

### **MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL**

Minimum Control Measures (MCM) 4, Construction Site Stormwater Runoff Control, requires the City of Haverhill to design a program to reduce impacts to stormwater from active construction sites that disturb an acre or more of land. “The objective of an effective construction stormwater runoff control program is 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 [City’s] MS4”. The selected BMPs include long standing activities, such as stormwater review of construction projects under Conservation Commission jurisdiction, as well as newer activities that will maintain and improve control of runoff from active construction sites greater than one acre.

The City adopted Chapter 219 Stormwater Management on June 26, 2018 that requires all construction, development, and redevelopment activities involving land disturbance of one acre or more and that discharge stormwater to the City’s MS4 obtain a stormwater management permit. The stormwater management permits are reviewed by the Conservation Commission as part of the Site Plan Review process, and includes requirements for erosion and sediment controls. Chapter 219 can be viewed online at the following web address: <https://www.ecode360.com/6261944>. Additionally, the Conservation Commission enforces the Massachusetts Stormwater Management Policy and Stormwater Management Regulations for projects that are within its jurisdiction. For projects that disturb an acre or more, the Conservation Commission requires proof of EPA authorization under NPDES as well as a copy of the Construction General Permit NOI. Prior to commencing work, the Conservation Commission requires the submittal of a Stormwater Pollution Prevention Plan.

#### **BMP #4-1: SITE INSPECTION AND ENFORCEMENT PROCEDURES**

*Description:* Complete written procedures of site inspection and enforcement procedures for erosion and sediment control (ESC) measures.

*Measurable Goal:* Complete within one year of the effective date of the permit (by July 1, 2019).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Conservation Commission

**BMP #4-2: SITE PLAN REVIEW**

*Description:* Complete written procedures for site plan review and implement procedures.

*Measurable Goal:* Complete within one year of the effective date of the permit (by July 1, 2019).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Engineering

**BMP #4-3: EROSION AND SEDIMENT CONTROL**

*Description:* Adopt requirements for construction operators to implement a sediment and erosion control program.

*Measurable Goal:* Complete within one year of the effective date of the permit (by July 1, 2019).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Conservation Commission

**BMP #4-4: WASTE CONTROL**

*Description:* Adopt requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes.

*Measurable Goal:* Complete within one year of the effective date of the permit (by July 1, 2019).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Conservation Commission

## SECTION 6

### MCM 5: POST CONSTRUCTION STORMWATER MANAGEMENT

Minimum Control Measure (MCM) 5, Post Construction Stormwater Management, requires the City of Haverhill to design a program to protect stormwater quality from new development and redevelopment that disturbs an acre or more of land. “The objective of an effective post construction stormwater management program is to reduce the discharge of pollutants found in stormwater to the MS4 through the retention or treatment of stormwater after construction on new or redeveloped sites and to ensure proper maintenance of installed stormwater controls”. The City has several long-standing activities that meet the intent of the permit as well as new BMPs to meet the requirements of the permit. The selected BMPs will allow the City to better control stormwater runoff from new development and redevelopment projects. The City adopted Chapter 219 Stormwater Management on June 26, 2018, which includes provisions for the long-term operation and maintenance of privately-owned stormwater management systems under Article V Post-Construction. Chapter 219 can be viewed online at the following web address: <https://www.ecode360.com/6261944>.

#### **BMP #5-1: AS-BUILT PLANS FOR ON-SITE STORMWATER CONTROL**

*Description:* Develop and implement procedures to require submission of as-built drawings and ensure long-term operation and maintenance.

*Measurable Goal:* Require submission of as-built plans for completed projects.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Engineering

#### **BMP #5-2: TARGET PROPERTIES TO REDUCE IMPERVIOUS AREAS**

*Description:* Identify at least five City-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually.

*Measurable Goal:* Complete four years after effective date of permit (by July 1, 2022) and report annually on retrofitted properties.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Engineering

### **BMP #5-3: ALLOW GREEN INFRASTRUCTURE**

*Description:* Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist.

*Measurable Goal:* Complete four years after effective date of permit (by July 1, 2022) and implement recommendations of report.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater, Conservation Commission, Engineering, Planning

### **BMP #5-4: STREET DESIGN AND PARKING LOT GUIDELINES**

*Description:* 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.

*Measurable Goal:* Complete four years after effective date of permit (by July 1, 2022) and implement recommendations of report.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Engineering, Planning

### **BMP #5-5: STORMWATER CONTROLS OR MANAGEMENT PRACTICES FOR NEW DEVELOPMENT AND REDEVELOPMENT**

*Description:* Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the 2016 MS4 General Permit and all applicable requirements of the Massachusetts Stormwater Handbook. Adopt, amend, or modify a regulatory mechanism to meet the requirements.

*Measurable Goal:* Complete two years after effective date of permit (by July 1, 2020).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Conservation Commission

## SECTION 7

### MCM 6: GOOD HOUSEKEEPING AND POLLUTION PREVENTION

Minimum Control Measure (MCM) 6, Good Housekeeping and Pollution Prevention, requires the City of Haverhill to develop and implement a program to prevent or reduce pollution in stormwater from municipal operations. The objective of MCM 6 is to “implement an operations and maintenance program for [City-owned] operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all [City-owned] operations”.

The City has long-standing activities in place, such as street sweeping and catch basin cleaning, and will continue to implement these BMPs as well as new BMPs to meet the requirements in the permit. These BMPs will help minimize pollution from municipal operations.

#### **BMP #6-1: O&M PROCEDURES**

*Description:* Develop written operation and maintenance (O&M) procedures for municipal facilities and operations including all requirements contained in section 2.3.7.a.ii of the 2016 MS4 General Permit for parks and open spaces, buildings and facilities, and vehicles and equipment.

*Measurable Goal:* Complete and implement two years after effective date of permit (by July 1, 2020). Completed O&M procedures will be maintained at the applicable facilities, posted on the City’s Stormwater webpage, and incorporated into the SWMP by reference (under separate cover).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Water, Wastewater, Highway, Parks, Schools, Police, Fire, City Hall

#### **BMP #6-2: INVENTORY CITY-OWNED PARKS AND OPEN SPACES, BUILDINGS AND FACILITIES, AND VEHICLES AND EQUIPMENT**

*Description:* Develop an inventory of all City-owned parks and open spaces, buildings and facilities, and vehicles and equipment.

*Measurable Goal:* Complete two years after effective date of permit (by July 1, 2020), and update annually.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Engineering

### **BMP #6-3: INFRASTRUCTURE O&M**

*Description:* Establish and implement a program for repair and rehabilitation of MS4 infrastructure. The completed infrastructure O&M procedure will be maintained at the Department of Public Works, posted on the City's Stormwater webpage, and incorporated into the SWMP by reference (under separate cover).

*Measurable Goal:* Complete two years after effective date of permit (by July 1, 2020).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater, Engineering

### **BMP #6-4: STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**

*Description:* Develop SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities. Completed SWPPPs will be located at the applicable facilities, posted on the City's Stormwater webpage, and incorporated into the SWMP by reference (under separate cover). All supporting documentation related to implementation of the SWPPP will be maintained with the SWPPP.

*Measurable Goal:* Complete and implement two years after effective date of permit (by July 1, 2020).

*Schedule:* Begin BMP implementation in 2019.

*Responsible Department/Parties:* Water, Wastewater, Highway

### **BMP #6-5: CATCH BASIN CLEANING**

*Description:* Establish a schedule for catch basin cleaning such that each catch basin is no more than 50% full.

*Measurable Goal:* Clean catch basins on the established schedule. Annually report the number of catch basins cleaned and the volume of material removed.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater

### **BMP #6-6: STREET SWEEPING PROGRAM**

*Description:* Sweep all streets and City-owned parking lots in accordance with permit conditions.

*Measurable Goal:* Sweep all streets and City-owned parking lots a minimum of two times per year (spring and fall).

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Highway

### **BMP #6-7: ROAD SALT USE OPTIMIZATION PROGRAM**

*Description:* Establish and implement a program to minimize the use of road salt.

*Measurable Goal:* Implement salt use optimization during deicing season.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Highway

### **BMP #6-8: INSPECTIONS AND MAINTENANCE OF STORMWATER TREATMENT STRUCTURES**

*Description:* Establish and implement inspection and maintenance procedures and frequencies for City-owned stormwater treatment structures, such as water quality swales, retention/detention basins, infiltration structures, proprietary treatment devices, and other such structures.

*Measurable Goal:* Inspect all City-owned stormwater treatment structures (excluding catch basins) annually, and maintain City-owned treatment structures according to the established maintenance frequencies.

*Schedule:* Begin BMP implementation in 2018.

*Responsible Department/Parties:* Wastewater, Conservation Commission, Engineering, Highway

### **BMP #6-9: MUNICIPAL EMPLOYEE TRAINING**

*Description:* Implement a municipal employee training program to reduce stormwater pollution potential from municipal facilities and operations, including parks and open spaces, buildings and facilities, and vehicles and equipment.

*Measurable Goal:* Conduct regular training. O&M and SWPPP training will be documented and tracked under this BMP. IDDE training will be documented and tracked under BMP #3-5.

*Schedule:* Begin BMP implementation in 2020.

*Responsible Department/Parties:* Wastewater in coordinate with other departments

## SECTION 8

### TMDLS AND WATER QUALITY LIMITED WATERS

The City of Haverhill does not have any waterbodies with approved total maximum daily loads (TMDLs). A water quality limited waterbody is one that does not meet applicable water quality standards, but there is no EPA approved TMDL. Water quality limited waters require the City to implement additional measures to address the impairments by reducing these impairments in the City's stormwater discharges. The applicable impairments are summarized below:

<b>Impairments (refer to Appendix H of 2016 MS4 General Permit)</b>
Bacteria/Pathogens
Phosphorus

The following subsections summarize the additional requirements based on the applicable water quality limited waters.

#### 8.1 BACTERIA/PATHOGEN IMPAIRMENT

<b>Applicable Receiving Waterbodies</b>	<b>TMDL Name (if applicable)</b>
Creek Brook (MA84A-37)	
Little River (MA84A-09)	
Merrimack River (Downstream of Little River) (MA84A-05)	
Merrimack River (Upstream of Little River) (MA84A-04)	

#### **Annual Requirements Beginning Permit Year 1:**

##### **8.1.1 Rank outfalls to these receiving waters as high priority for IDDE implementation in the initial outfall ranking.**

Relevant BMP in Stormwater Program Management Program: #3-3

##### **8.1.2 Annual message encouraging the proper management of pet waste, including noting any existing ordinances, where appropriate.**

Relevant BMP in Stormwater Program Management Program: #1-6

**8.1.3 Disseminate educational material to dog owners at the time of issuance or renewal of dog license or other appropriate time.**

Relevant BMP in Stormwater Program Management Program: #1-6

**8.1.4 Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a waterbody impaired for bacteria.**

Relevant BMP in Stormwater Program Management Program: #1-12

Public Education messages will be combined with other public education requirements, as applicable (refer to H of the 2016 MS4 General Permit for more information).

**8.2 PHOSPHORUS IMPAIRMENT**

<b>Applicable Receiving Waterbody</b>	<b>TMDL Name (if applicable)</b>
Merrimack River (Upstream of Little River) (MA84A-04)	

**Annual Requirements Beginning Permit Year 1:**

**8.2.1 Distribute an annual message in the spring that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorus-free fertilizers**

Relevant BMP in Stormwater Program Management Program: #1-11

**8.2.2 Distribute an annual message encouraging the proper management of pet waste, including noting any existing ordinances, where appropriate**

Relevant BMP in Stormwater Program Management Program: #1-6

**8.2.3 Distribute an annual message in the fall encouraging the proper disposal of leaf litter**

Relevant BMP in Stormwater Program Management Program: #1-10

- 8.2.4 Increase street sweeping frequency of all municipal owned streets and parking lots subject to 2016 MS4 General Permit part 2.3.7.a.iii.3 to a minimum of two times per year (spring and fall)**

Relevant BMP in Stormwater Program Management Program: #6-6

**Annual Requirements Beginning Permit Year 2:**

- 8.2.5 The requirement for adoption/amendment of the City's ordinance or other regulatory mechanism shall include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal**

Relevant BMP in Stormwater Program Management Program: #5-5

- 8.2.6 Establish procedures to properly manage grass cuttings and leaf litter on City-owned property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces**

Relevant BMP in Stormwater Program Management Program: #6-1

**Annual Requirements Beginning Permit Year 4:**

- 8.2.7 Retrofit inventory and priority ranking under 2016 MS4 General Permit part 2.3.6.d. shall include consideration of BMPs to reduce phosphorus discharges and infiltrate stormwater, where feasible.**

Relevant BMP in Stormwater Program Management Program: #5-2

- 8.2.8 Complete a phosphorus source identification report per the requirements of Appendix H, part II.1.b of the 2016 MS4 General Permit. The phosphorus source identification report shall be submitted to EPA as part of the Permit Year 4 annual report.**

The document will be posted on the City's Stormwater web page at the following web address: [https://www.cityofhaverhill.com/departments/storm\\_water\\_program/index.php](https://www.cityofhaverhill.com/departments/storm_water_program/index.php)

**Annual Requirements Beginning Permit Year 5:**

**8.2.9 Evaluate all City-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under 2016 MS4 General Permit part 2.3.6.d or identified in the phosphorus source identification report that are within the drainage area of the impaired water or its tributaries**

Relevant BMP in Stormwater Program Management Program: #5-2 and/or 8.2.8

**8.2.10 Complete a listing of planned structural BMPs and a plan and schedule for implementation, and include in the Permit Year 5 annual report. Within six years of the effective date of the permit, install a minimum of one structure BMP as a demonstration project within the drainage area of the water quality limited waterbody or its tributaries.**

Relevant BMP in Stormwater Program Management Program: #5-2 and/or 8.2.8

**8.2.11 Any structural BMPs listed in Attachment 3 to Appendix F of the 2016 MS4 General Permit installed in the water quality limited watershed within the regulated area by the City of Haverhill shall be tracked and the City shall estimate the phosphorus removal by the BMP consistent with Attachment 3 to Appendix F of the 2016 MS4 General Permit. Include the BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP in each annual report.**

Relevant BMP in Stormwater Program Management Program: #5-2 and/or 8.2.8

## **SECTION 9**

### **EVALUATION, RECORD KEEPING, AND REPORTING**

#### **9.1 PROGRAM EVALUATION**

The City of Haverhill will self-evaluate their progress towards implementation of the Stormwater Management Program (SWMP) and compliance with the 2016 MS4 General Permit. The self-evaluation will be submitted with the annual report and also maintained as part of the SWMP.

The self-evaluation will review the appropriateness of the selected BMPs in achieving the objectives of each minimum control measure and measurable goals. The self-evaluation will assess topics such as public education, public input and participation; proposed activities, goals, and timelines; effectiveness of BMPs, and potential modifications to the SWMP. If a BMP is found to be ineffective, the SWMP will be updated in accordance with the provisions in part 4.1 of the 2016 MS4 General. BMP modifications will be described in the annual report.

#### **9.2 RECORD KEEPING**

All documentation and records required by the 2016 MS4 General Permit will be maintained by the City of Haverhill for a period of at least five years. Records include but are not limited to: information used in the development of any written (hard copy or electronic) program, monitoring results, copies of reports, records of screening, follow-up and elimination of illicit discharges, maintenance records, inspection records, and data used in the development of the NOI, SWMP, SWPPP, and annual reports.

#### **9.3 REPORTING**

The City of Haverhill will submit an annual report each year of the permit term. The first annual report will cover the period from May 1, 2018 to June 30, 2019, subsequent years will span from July 1 to June 30 of each year. The annual report is due 90 days from June 30 (September 28), and will be submitted electronically to: [stormwater.reports@epa.gov](mailto:stormwater.reports@epa.gov).

The Annual Report will contain the following information (excerpt from part 4.4.b of the 2016 MS4 General Permit):

- 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.
- 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.