CITY OF NORTHAMPTON, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
125 Locust Street
Northampton, MA 01060

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Donna LaScaleia
Director

Stormwater Management Program (SWMP)

City of Northampton

125 Locust Street MA 01060

EPA NPDES Permit Number 041016

Certification

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

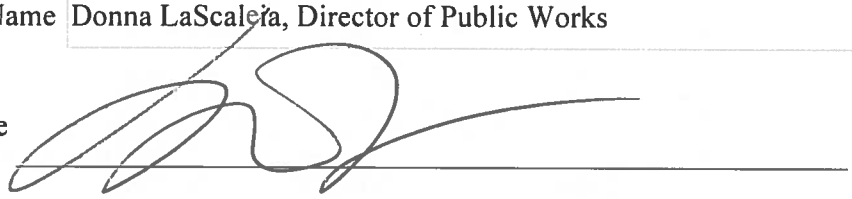
☒ Attached to this document (document name listed below)

Northampton_MS4 Delegation of Authority_20190301

☐ 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 Donna LaScaleia, Director of Public Works

Signature 

Date 6-27-19

Click Here for Revisions

Background

Stormwater Regulation

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

Permit Program Background

On May 1, 2003, EPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 small MS4 permit) consistent with the Phase II rule. The 2003 small MS4 permit covered "traditional" (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. This permit expired on May 1, 2008 but remained in effect until operators were authorized under the 2016 MS4 general permit, which became effective on July 1, 2018.

Stormwater Management Program (SWMP)

The SWMP describes and details the activities and measures that will be implemented to meet the terms and conditions of the permit. The SWMP accurately describes the permittees plans and activities. The document should be updated and/or modified during the permit term as the permittee's activities are modified, changed or updated to meet permit conditions 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.

Town Specific MS4 Background (optional)

The City of Northampton is required to be covered under the 2016 MS4 general permit for its stormwater discharges. Northampton's stormwater management program is manged within the Department of Public Works (DPW).

Small MS4 Authorization

The NOI was submitted on Sep 28, 2018

The NOI can be found at the following (document name or web address):

https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities

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Authorization to Discharge was granted on Feb 14, 2019

The Authorization Letter can be found (document name or web address):

https://www3.epa.gov/region1/npdes/stormwater/ma/tms4noi/northampton-auth.pdf

Stormwater Management Program Team

SWMP Team Coordinator

Name	David Veleta	Title	City Engineer
Department	Department of Public Works, Engineering		
Phone Number	413-587-1570 x4310	Email	dveleta@northamptonma.gov
Responsibilities	Overall program management and implementation of BMPs.		

SWMP Team

Name	Douglas McDonald	Title	Stormwater Manager
Department	Department of Public Works, Engineering		
Phone Number	413-587-1582	Email	dmcdonald@northamptonma.gov
Responsibilities	General program implementation, implementation of some BMPs, program compliance tracking, report/document preparation, member of regional stormwater committee		

Name	Michael Antosz	Title	Highway Superintendent
Department	Department of Public Works, Highway & Sewer/Stormwater Divsion		
Phone Number	413-587-1570 x4315	Email	mantosz@northamptonma.gov
Responsibilities	Implementation of BMPs		

Name	Gregory Newman	Title	Senior Engineer
Department	Department of Public Works, Engineering		
Phone Number	413-587-1570 x4307	Email	gnewman@northamptonma.gov
Responsibilities	Implementation of BMPs		

Name	Brendan Shea	Title	Sewer/Stormwater Superintendent
Department	Department of Public Works, Sewer & Stormwater Division		
Phone Number	413-587-1570 x4316	Email	bshea@northamptonma.gov
Responsibilities	Implementation of BMPs		

Add SWMP Member

Receiving Waters

The following table lists all receiving waters, impairments and number of outfalls discharging to each waterbody segment.

OR

The information can be found in the following document or at the following web address:

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
Barrett/King Street Brook	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Bassett/Parsons Brook	14	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Broad Brook	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Broughtons/Elm Street Brook	16	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Connecticut River (MA34-04)	10	☐	☐	☐	☐	☐	☐	☐	☒	☐	PCB in Fish Tissue
Day Brook	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Deer Brook	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Florence Stream	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Halfway Brook	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Hannum Brook	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Lower Meadow Brook	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Market Street Brook	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Mill River (MA34-28)	59	☐	☐	☐	☐	☐	☐	☐	☒	☐	
Mill River Diversion (MA34-32)	13	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Mill Stream	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Nashawannock Brook	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	

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
North Branch Manhan River (MA34-54)	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Old Mill River	20	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Phelps Brook	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Pine Brook	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Roberts Meadow Brook	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Rocky Hill Brook	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Sandy Hill Brook	13	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Barrett/King Street Brook	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Bassett/Parsons Brook	53	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Danks Pond	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Deer Brook	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Hannum Brook	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary to Manhan River		☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Mill River	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Mill River Diversion	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Unnamed Tributary/Wetlands to Sandy Hill Brook	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Click here to lengthen table

Eligibility: Endangered Species and Historic Properties

*Reminder: The proper consultations and updates to the SWMP must be conducted for construction projects related to your permit compliance where Construction General Permit (CGP) coverage, which requires its own endangered species and history preservation determination, is NOT being obtained.

Attachments:

- ☒ The results of Appendix C U.S. Fish and Wildlife Service endangered species screening determination
- ☐ The results of the Appendix D historic property screening investigations
- ☐ If applicable, any documents from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other Tribal representative to mitigate effects

These attachments are required within one year of the permit effective date and are:

- ☒ Attached to this document (document names listed below)

  USFW ESA MS4 Permit Letter_Northampton_20181001

- ☐ Publicly available at the website listed below

Under what criterion did permittee determine eligibility for ESA?

☐ Criterion A ☒ Criterion B ☐ Criterion C

Under what criterion did permittee determine eligibility for Historic Properties?

☒ Criterion A ☐ Criterion B ☐ Criterion C

Below add any additional measures for structural controls that you're required to do through consultation with U.S. Fish and Wildlife Service (if applicable):

Below add any additional measures taken 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 applicable):

MCM 1
Public Education and Outreach
Permit Part 2.3.2

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 the pollutants in stormwater are reduced.

Examples and Templates:
EPA's Stormwater Education Toolbox
MassDEP's Stormwater Outreach Materials

Other templates relevant to MCM 1 can be found here: https://www.epa.gov/npdes-permits/stormwater-tools-new-england#peo

BMP: Cigarette Butts Message

BMP Number (Optional) **1-GP1**

Document Name and/or Web Address: To be provided once completed

Description:

Update Butts material from Think Blue campaign and distribute as panels on PVTA buses, also issue press release, and post on social media and Think Blue Connecticut River website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
-PVTA's estimated exposure rates for panels
press releases sent and published
of "shares" or "likes" on social media such as Facebook or Twitter
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 2

BMP: Nip Bottles Message

BMP Number (Optional) **1-GP2**

Document Name and/or Web Address: To be provided once completed

Description:

Develop message on nip bottles (and possibly litter generally) and distribute as panels on PVTA buses, also issue press release, and post on social media and Think Blue Connecticut River website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
-PVTA's estimated exposure rates for panels
press releases sent and published
of "shares" or "likes" on social media such as Facebook or Twitter
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 4

BMP: Dumpster Waste and Avoiding Contaminated Flows Message

BMP Number (Optional) **1-GP3**

Document Name and/or Web Address: To be provided once completed

Description:

Customize Think Blue MA material to create attractive flyer for waste management companies in the region to distribute to business customers. Provide further related instruction/information on Connecticut River Think Blue website.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of flyers distributed
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 2

BMP: Installation of Hooded Catch Basins to Keep Fuels from Local Surface Waters

BMP Number (Optional) **1-GP4**

Document Name and/or Web Address: To be provided once completed

Description:

Letter to facility directors of properties with large parking lots.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 4

BMP: New MS4 Development Standards and E&S Control

BMP Number (Optional) **1-GP5**

Document Name and/or Web Address: To be provided once completed

Description:

Workshop at regional conference (Western Mass Developers Conference would be good target if held) on new MS4 development standards and E&S control

Targeted Audience: Developers (construction)

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
attending workshop
-Results from post workshop survey

Message Date(s): Year 2

BMP: LID Strategies and Technologies

BMP Number (Optional) **1-GP6**

Document Name and/or Web Address: To be provided once completed

Description:

Workshop at regional conference (Western Mass Developers Conference would be good target if held) on LID strategies and technologies

Targeted Audience: Developers (construction)

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
attending workshop
-Results from post workshop survey

Message Date(s): Year 4

BMP: Fleet Maintenance

BMP Number (Optional) **1-GP7**

Document Name and/or Web Address: To be provided once completed

Description:

Customize Think Blue MA material to create attractive fact sheet promoting best practices for fleet

maintenance and send to local industrial facilities.

Targeted Audience: Industrial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of fact sheets sent
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 2

BMP: Installation of hooded catch basins to keep fuels from local surface waters

BMP Number (Optional) **1-GP8**

Document Name and/or Web Address: To be provided once completed

Description:

Letter to facility directors of properties with large parking lots. Provide further related instruction/information on Connecticut River Think Blue website.

Targeted Audience: Industrial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 4

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H1**

Document Name and/or Web Address: "Get wise about leaf litter. Consider your options."

Description:

Prepared flyer that promotes action for and enables proper disposal practice and distribute to large lawn and garden centers in region.

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
flyers distributed / retrieved
of "shares" or "likes" on social media such as Facebook or Twitter
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Fall of Year 1: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H2**

Document Name and/or Web Address: To be provided once completed

Description:

Press release and social media post, indicating availability of brochure on the value of leaf litter and how to create compost for use in your garden on Connecticut River Think Blue website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent
# of clicks on website
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Fall of Year 2: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H3**

Document Name and/or Web Address: "Get wise about leaf litter. Consider your options."

Description:

Reprise Year 1 flyer as brochure and door hanger that can be distributed to homes in known problem locations along rivers, streams, lakes, and ponds, and promoted on social media and website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
brochures and door hangers distributed
of "shares" or "likes" on social media such as Facebook or Twitter
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Fall of Year 3: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H4**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise press release and social media post from Year 2, indicating availability of brochure on the value of leaf litter and how to create compost for use in your garden on Connecticut River Think Blue website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent
# of clicks on website
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Fall of Year 4: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H5**

Document Name and/or Web Address: To be provided once completed

Description:

PSA to air locally and social media post

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

# of people reached based on estimate of exposure from radio stations
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Fall of Year 5: August/September/October

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H6**

Document Name and/or Web Address: "Get wise about your lawn. Consider your options"

Description:

Flyer and social media post with key actions for good practice

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of flyers distributed
of "shares" or "likes" on social media such as Facebook or Twitter

Message Date(s): Spring of Year 1: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H7**

Document Name and/or Web Address: To be provided once completed

Description:

Press release and social media post, indicating availability of brochure on soil testing, reading results, and proper follow up that is available on Connecticut River Think Blue website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of press releases distributed and # of times published
of "shares" or "likes" on social media such as Facebook or Twitter

of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Spring of Year 2: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H8**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise flyer and social media post from Year 1 on key actions for good practice

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of flyers distributed
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Spring of Year 3: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H9**

Document Name and/or Web Address: To be provided once completed

Description:

Fact sheet and social media posts on grass clippings = free fertilizer to be posted on Connecticut River Think Blue website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Spring of Year 4: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H10**

Document Name and/or Web Address: To be provided once completed

Description:

Public service announcement to air locally and post on social media and Connecticut River Think Blue website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of people reached based on estimate of exposure from radio stations
of "shares" or "likes" on social media such as Facebook or Twitter
of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Spring of Year 5: April/May

BMP: Proper management of pet waste

BMP Number (Optional) **1-F/H11**

Document Name and/or Web Address: To be provided once completed

Description:

Update Spike poster and send with letter to veterinary offices

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters and posters sent
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Summer of Year 1: June/July

BMP: Proper management of pet waste

BMP Number (Optional) **1-F/H12**

Document Name and/or Web Address: To be provided once completed

Description:

Issue pledge card on pet waste pick up through social media and Connecticut River Think Blue website. Will include messaging that pet waste is not a fertilizer.

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of pledges
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Summer of Year 2: June/July

BMP: Proper management of pet waste

BMP Number (Optional) **1-F/H13**

Document Name and/or Web Address: To be provided once completed

Description:

Update Spike poster from Think Blue campaign and distribute as panels on PVTA buses, press release, and post on social media and Think Blue Connecticut River website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
PVTA's estimated exposure rates for panels
press releases sent and published
of "shares" or "likes" on social media such as Facebook or Twitter
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Summer of Year 3: June/July

BMP: Proper management of pet waste

BMP Number (Optional) **1-F/H14**

Document Name and/or Web Address: To be provided once completed

Description:

Flyer insert or e-mail with dog licenses announcing new local signs and local regulations on pet waste pick up

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of flyers distributed
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Winter of Year 4: Change from June/July so that can time with issuance of dog licenses

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BMP: Proper management of pet waste

BMP Number (Optional) **1-F/H15**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise issuance of pledge card from Year 2 on pet waste pick up through social media and Connecticut River Think Blue website

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of pledges
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Summer of Year 5: June/July

BMP: Proper septic system care

BMP Number (Optional) **1-H1**

Document Name and/or Web Address: To be provided once completed

Description:

Letter for Boards of Health to send promoting best practices for homes on septic systems in problem

catchments

Targeted Audience: Residents

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Year 3

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H16**

Document Name and/or Web Address: To be provided once completed

Description:

Letter from Stormwater Committee to landscapers in region on importance of proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Fall of Year 1: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H17**

Document Name and/or Web Address: To be provided once completed

Description:

Mailing to landscapers in the region that lists locations for proper disposal of commercial leaf litter

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Fall of Year 2: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H18**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise and update Year 1 letter from Stormwater Committee to landscapers in region on importance of proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Fall of Year 3: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H19**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise and update Year 2 mailing to landscapers in the region that lists locations for proper disposal of commercial leaf litter

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Fall of Year 4: August/September/October

BMP: Proper disposal of leaf litter

BMP Number (Optional) **1-F/H20**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise and update Year 3 letter from Stormwater Committee to landscapers in region on importance of proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Fall of Year 5: August/September/October

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H21**

Document Name and/or Web Address: To be provided once completed

Description:

Letter from Stormwater Committee to landscapers in region on importance of soil testing, proper use of fertilizers, and value of grass clippings/proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Spring of Year 1: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H22**

Document Name and/or Web Address: To be provided once completed

Description:

Workshop for large institutions to promote better lawns/turf management and awareness of MassDAR fertilizer regulations and nitrogen concerns in region

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of attendees

Message Date(s): Spring of Year 2: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H23**

Document Name and/or Web Address: To be provided once completed

Description:

Workshop for professional landscapers on importance of soil testing, proper use of fertilizers, and value of grass clippings/proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee working with UMass Ext

Measurable Goal(s):

Number of people reached, including:
# of attendees

Message Date(s): Spring of Year 3: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H24**

Document Name and/or Web Address: To be provided once completed

Description:

Workshop for Garden Center staff in the region on best recommendations, including importance of soil testing, proper use of fertilizers, and value of grass clippings/proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee working with UMass Ext

Measurable Goal(s):

Number of people reached, including:
# of attendees

Message Date(s): Spring of Year 4: April/May

BMP: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal

BMP Number (Optional) **1-F/H25**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise and update Year 1 letter from Stormwater Committee to landscapers in region on importance of soil testing, proper use of fertilizers, and value of grass clippings/proper disposal

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters sent

Message Date(s): Spring of Year 5: April/May

BMP: Proper management of animal waste (pet and geese)

BMP Number (Optional) **1-F/H26**

Document Name and/or Web Address: To be provided once completed

Description:

Letter targeting certain businesses, commercial, and institutional property owners explaining strategies for geese management and resources

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters distributed

Message Date(s): Summer of Year 1: June/July

BMP: Proper management of animal waste (pet and geese)

BMP Number (Optional) **1-F/H27**

Document Name and/or Web Address: To be provided once completed

Description:

Letter to larger properties with problem locations offering sign design template promoting pet waste pick up

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters distributed

Message Date(s): Summer of Year 2: June/July

BMP: Proper management of animal waste (pet and geese)

BMP Number (Optional) **1-F/H28**

Document Name and/or Web Address: To be provided once completed

Description:

Piggyback on messaging for residents in Year 3 on pet waste, updating Spike poster from Think Blue campaign and distribute as panels on PVTA buses, press release, and post on social media and Think Blue Connecticut River website

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
-PVTA's estimated exposure rates for panels

press releases sent and published
of "shares" or "likes" on social media such as Facebook or Twitter
# of hits on the Connecticut River Think Blue website after message distribution

Message Date(s): Summer of Year 3: June/July

BMP: Proper management of animal waste (pet and geese)

BMP Number (Optional) **1-F/H29**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise and update Year 1 letter targeting certain businesses, commercial, and institutional property owners explaining strategies for geese management and resources

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters distributed

Message Date(s): Summer of Year 4: June/July

BMP: Proper management of animal waste (pet and geese)

BMP Number (Optional) **1-F/H30**

Document Name and/or Web Address: To be provided once completed

Description:

Reprise and update Year 2 letter to larger properties with problem locations offering sign design template promoting pet waste pick up

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: DPW, Connecticut River Stormwater Committee

Measurable Goal(s):

Number of people reached, including:
# of letters distributed

Message Date(s): Summer of Year 5: June/July


Add BMP

MCM 2
Public Involvement and Participation
Permit Part 2.3.3

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

BMP: Public Review of Stormwater Management Program

BMP Number (Optional) **2-A**

Location of Plan and/or Web Address: http://northamptonma.gov/1998/Stormwater-Management-Program

Responsible Department/Parties: DPW

Measurable Goal(s):

Stormwater Management Plan is publicly available on the City Website and at the DPW Office, 125 Locust Street, Northampton.

BMP: Public Participation in Stormwater Management Program Development

BMP Number (Optional) **2-B**

Description:

Annually accept comments for public SWMP review

Responsible Department/Parties: DPW

Measurable Goal(s):

Annual public participation

BMP: Rain Barrel Program and Compost Bins

BMP Number (Optional) **2-C**

Document Name and/or Web Address: http://northamptonma.gov/1820/Compost

Description:

Promote and offer rain barrels and compost bins to residents at a discounted rate seasonally.

Responsible Department/Parties: DPW

Measurable Goal(s):

Number of rain barrels purchased.

BMP: Household Hazardous Waste Collection

BMP Number (Optional) **2-D**

Document Name and/or Web Address: http://northamptonma.gov/1826/Hazardous-Waste

Description:

Continue to hold annual Household Hazardous Waste Collection event for residents.

Responsible Department/Parties: DPW

Measurable Goal(s):

Number of residents participating and quantity of material collected.

Add BMP

MCM 3
Illicit Discharge Detection and Elimination (IDDE) Program

Permit Part 2.3.4

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

Examples and Templates:
IDDE Program Template and SOPs

Other templates relevant to IDDE can be found here: https://www.epa.gov/npdes-permits/stormwater-tools-new-england#idde

BMP: IDDE Legal Authority

BMP Number (Optional) **3-A** **Completed** (by May 1, 2008) ☒

Ordinances Link or Reference: https://ecode360.com/13265220

Department Responsible for Enforcement: DPW

BMP: Sanitary Sewer Overflow (SSO) Inventory

BMP Number (Optional) **3-B** **Completed** (by year 1) ☒

Document Name and/or Web Address: Included in Northampton IDDE Plan

Description:

Develop a five year SSO inventory and update annually in accordance with permit requirements.

Responsible Department/Parties: DPW

Measurable Goal(s):

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

SSO Reporting:

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

The MassDEP contacts are: Western Region (413) 784-1100 436 Dwight Street Springfield, MA 01103 24-hour Emergency Line 1-888-304-1133	The EPA contacts are: EPA New England (617) 918-1510 5 Post Office Square Boston, MA 02109

BMP: Map of Storm Sewer System

BMP Number (Optional) **3-C** **Phase I Completed** (by year 2) ☐ **Phase II Completed** (by year 10) ☐

Document Location and/or Web Address: http://northamptonma.gov/1998/Stormwater-Management-Program

Description:

Create map and update during IDDE program implementation in accordance with permit requirements and recommendations.

Responsible Department/Parties: DPW

Measurable Goal(s):

Map 100% of outfalls and receving waters, open channel conveyances, interconnections with other MS4s and other storm sewer systems, municipally-owned stormwater treatment structures, waterbodies identified by name and indication of all use impairments, and initial catchment delineations within 2 years of the permit's effective date. Map 100% of outfall spatial locations, pipes, manholes, catch basins, refined catchment delineations, municipal sanitary sewer system (if available), and municipal combined sewer system (if applicable) within 10 years of the permit's effective date.

BMP: IDDE Program

BMP Number (Optional) **3-D** **Written Document Completed** (by year 1) ☒

Document Name and/or Web Address: Northampton IDDE Plan

Description:

Create written IDDE program and implement required activities.

Responsible Department/Parties: DPW

Measurable Goal(s):

Conduct 100% of outfall screening on High and Low Priority Outfalls within 3 years of the permit's effective date. Complete catchment investigations for 100% of the Problem Outfalls within 7 years of the permit's effective date. Complete 100% of all catchment investigations within 10 years of the permit's effective date.

The outfall/interconnection inventory and initial ranking and the dry weather outfall and interconnection screening and sampling results can be found:

Included in the IDDE Plan

BMP: Employee Training

BMP Number (Optional) **3-E**

Description:

Provide IDDE training to designated employees.

Responsible Department/Parties: DPW

Measurable Goal(s):

Training occurs annually.

BMP:[BMP name here]

BMP Number (Optional) _____ **Completed** ☐

Document Name and/or Web Address:

Description:

Responsible Department/Parties:

Measurable Goal(s):

Add BMP

MCM 4
Construction Site Stormwater Runoff Control
Permit Part 2.3.5

Objective: 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 permittee's MS4.

Examples and Templates:
Examples and templates relevant to MCM 4, including model ordinances and site inspection templates, can be found here: https://www.epa.gov/npdes-permits/stormwater-tools-new-england#csrc

BMP: Sediment and Erosion Control Ordinance

BMP Number (Optional) **4-A** **Completed** (by May 1, 2008) ☒

Ordinances Link or Reference: https://ecode360.com/13265221

Department Responsible for Enforcement: DPW

BMP: Site Plan Review Procedures

BMP Number (Optional) **4-B** **Written procedures completed** (by year 1) ☒

Document Name and/or Web Address: Stormwater Management Ordinance and Stormwater Management Permit Application and Site Plan Review SOP

Description:

Complete written procedures of site plan review and begin implementation. Evaluate updates to the Stormwater Management Ordinance.

Responsible Department/Parties: DPW

Measurable Goal(s):

Conduct site plan review of 100% of projects according to the procedures outlined above.

BMP: Site Inspections and Enforcement of Sediment and Erosion Control Measures Procedures

BMP Number (Optional) **4-C** **Completed** (by year 1) ☒

Document Name and/or Web Address: Northampton Construction Site Inspection SOP and Northampton Erosion and Sedimentation SOP

Description:

Complete written procedures of site inspections and enforcement procedures.

Responsible Department/Parties: DPW

Measurable Goal(s):

Inspect 100% of construction sites as outlined in the above document and take enforcement actions as needed.

BMP: Update Construction Site Requirements in Existing Stormwater Management Ordinance

BMP Number (Optional) **4-D** **Completed** ☐

Document Name and/or Web Address:

Description:

Review existing erosion and sediment control and waste control sections of the Stormwater Management Ordinance and amend as necessary to comply with the Permit requirements.

Responsible Department/Parties: DPW

Measurable Goal(s):

If update is required, complete by 7/1/2023.

Add BMP

MCM 5
Post Construction Stormwater Management in New Development and Redevelopment

Permit Part 2.3.6

Objective: 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.

Examples and Templates:
Examples and templates relevant to MCM 5, including model ordinances and bylaw review templates and guidance can be found here: https://www.epa.gov/npdes-permits/stormwater-tools-new-england#pcsm

BMP: Post-Construction Ordinance

BMP Number (Optional) **5-A** **Completed** (by year 2) ☐

Town Ordinances Link or Reference: https://ecode360.com/13265221

Department Responsible for Enforcement: DPW

BMP: Street Design and Parking Lot Guidelines Report

BMP Number (Optional) **5-B** **Completed** (by year 4) ☒

Document Name and/or Web Address: Assessment of Current Street Design and Parking Lot Guidelines that Affect the Creation of Impervious Area, June 2022

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.

Responsible Department/Parties: DPW and other City Departments to be determined

Measurable Goal(s):

Recommendations are implemented by July 1, 2022 with progress reported annually.

BMP: Green Infrastructure Report

BMP Number (Optional) **5-C** **Completed** (by year 4) ☒

Document Name and/or Web Address: Assessment of Current Regulations to Determine the Feasibility of Making Green Roofs, Infiltration Practices and Water Harvesting Allowable, June 2022

Description:

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

Responsible Department/Parties: DPW and other City Departments to be determined

Measurable Goal(s):

Recommendations are implemented by July 1, 2022 with progress reported annually.

BMP: List of Municipal Retrofit Opportunities

BMP Number (Optional) **5-D** **Completed** (by year 4) ☒

Document Name and/or Web Address:

Description:

Identify 5 permitee-owned properties that could be modified or retrofitted with BMPs to reduce the frequency, volume and pollutant loads of stormwater to and from its MS4 through the reduction of impervious area. In accordance with Appendix F, one of the BMPs identified will be installed as a demonstration project targeting a catchment with high nitrogen load potential.

Responsible Department/Parties: DPW and other City Departments to be determined

Measurable Goal(s):

The list is completed by July 1, 2022 and updated as needed.

BMP: Stormwater Management Ordinance Amendments to Meet Permit Requirements

BMP Number (Optional) **5-E** **Completed** ☐

Document Name and/or Web Address:

Description:

Amend the existing Stormwater Management Ordinance to meet the requirements for new development and redevelopment contained in 2.3.6 and in Appendices F and H.

Responsible Department/Parties: DPW

Measurable Goal(s):

Modify by 7/1/2023

Add BMP

MCM 6
Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Permit Part 2.3.7

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.

Examples and Templates:
Examples and templates relevant to MCM 6, including SOP templates for catch basin cleaning, street sweeping, vehicle maintenance, parks and open space management, winter deicing, and Stormwater Pollutoin Prevention Plans can be found here: https://www.epa.gov/npdes-permits/stormwater-tools-new-england#gh

PERMITTEE OWNED FACILITIES

BMP: Parks and Open Spaces Operations and Maintenance Procedures

BMP Number (Optional) **6-A** **Written Document Completed** (by year 2) ☐

Document Name and/or Web Address:

Description:

Identify properties and create written O&M procedures (SOP) including all requirements contained in 2.3.7.a. ii for parks and open spaces.

Responsible Department/Parties: DPW and other City departments to be determined

Measurable Goal(s):

Implement the SOP listed above on 100% of the parks and open spaces by July 1, 2020.

Properties List (Optional)**:**

BMP: Buildings and Facilities Operations and Maintenance Procedures

BMP Number (Optional) **6-B** **Written Document Completed** (by year 2) ☐

Document Name and/or Web Address:

Description:

Identify and create written O&M procedures (SOP) including all requirements contained in 2.3.7.a.ii for municipal buildings and facilities.

Responsible Department/Parties: DPW and other City departments to be determined

Measurable Goal(s):

Implement the SOP listed above on 100% of buildings and facilities by July 1, 2020.

Properties List (Optional)**:**

BMP: Vehicles and Equipment Operations and Maintenance Procedures

BMP Number (Optional) **6-C** **Written Document Completed** (by year 2) ☐

Document Name and/or Web Address:

Description:

Identify and create written O&M procedures (SOP) including all requirements contained in 2.3.7.a.ii for municipal vehicles and equipment.

Responsible Department/Parties: DPW and other City departments to be determined

Measurable Goal(s):

Implement the SOP listed above for 100% of vehicles and equipment according to the above document by July 1, 2020.

Properties List (Optional)**:**

INFRASTRUCTURE

BMP: Infrastructure Operations and Maintenance Procedures

BMP Number (Optional) **6-D** **Written Procedure Completed** (by year 2) ☐

Document Name and/or Web Address:

Description:

Establish a written program detailing the procedures the City will implement so that the MS4 infrastructure is maintained to reduce the discharge of pollutants.

Responsible Department/Parties: DPW

Measurable Goal(s):

100% of infrastructure is maintained to ensure proper function in accordance with the procedures above.

BMP: Catch Basin Cleaning Program

BMP Number (Optional) **6-E** **Written Procedure Completed** (by year 1) ☒

Document Name and/or Web Address: Northampton Catch Basin Inspection and Cleaning SOP

Description:

Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule.

Responsible Department/Parties: DPW

Measurable Goal(s):

All catch basins are cleaned in accordance to the document above such that no catch basin is more than 50% full at any given time.

BMP: Street Sweeping Program

BMP Number (Optional) **6-F** **Written Procedure Completed** (by year 1) ☒

Document Name and/or Web Address: Northampton Sweeping Streets and Parking Lots SOP

Description:

Sweep all streets (except rural uncurbed roads with no catch basins) and permitee-owned parking parking lots a minimum of two times per year, once in the spring (following winter activities such as sanding) and at least once in the fall (Sept 1 - Dec 1; following leaf fall). Rural uncurbed roadways with no catch basins will be swept according to the above schedule or develop and implement a written inspection, documentation and targeted sweeping plan by year 2.

Responsible Department/Parties: DPW

Measurable Goal(s):

Annually sweep 100% of all streets and 50% of all municipal parking lots in accordance with the schedule listed above.

BMP: Winter Road Maintenance Program

BMP Number (Optional) **6-G** **Written Procedure Completed** (by year 1) ☒

Document Name and/or Web Address: DPW Snow & Ice Removal Operations SOP

Description:

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

Responsible Department/Parties: DPW

Measurable Goal(s):

Implement salt use optimization during deicing season.

BMP: Stormwater Treatment Structures Inspection and Maintenance Procedures

BMP Number (Optional) **6-H** **Completed** (by year 1) ☒

Document Name and/or Web Address: Northampton Inspecting Constructed BMPs SOP

Description:

Establish and implement inspection and maintenance procedures and frequencies.

Responsible Department/Parties: DPW

Measurable Goal(s):

Inspect and maintain 100% of treatment structures to ensure proper function.

BMP: SWPPP

BMP Number (Optional) **6-I** **Completed** (by year 2) ☒

Document Name and/or Web Address:

Description:

Create SWPPPs for maintenance garages, transfer stations, and other waste handling facilities.

Responsible Department/Parties: DPW

Measurable Goal(s):

Develop and implement SWPPP for 125 Locust Street

BMP: Household Hazardous Waste Collection

BMP Number (Optional) **6-J** **Completed** ☐

Document Name and/or Web Address: http://northamptonma.gov/1826/Hazardous-Waste

Description:

Continue to offer annual household hazardous waste collection for residents.

Responsible Department/Parties: DPW

Measurable Goal(s):

Number of residents participating and quantities of material collected.

BMP: Rain Barrel and Compost Bin Program

BMP Number (Optional) **6-K**

Completed ☐

Document Name and/or Web Address: http://northamptonma.gov/1820/Compost

Description:

Continue program to promote and offer rain barrels and compost bins to residents at a reduced rate.

Responsible Department/Parties: DPW

Measurable Goal(s):

Number of rain barrels purchased by residents.

Add BMP

Annual Evaluation

Year 1 Annual Report

Document Name and/or Web Address:

https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities

Year 2 Annual Report

Document Name and/or Web Address:

https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities

Year 3 Annual Report

Document Name and/or Web Address:

https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities

Year 4 Annual Report

Document Name and/or Web Address:

https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities

Year 5 Annual Report

Document Name and/or Web Address:

Year X Annual Report

Document Name and/or Web Address:

Add a Year

TMDLs and Water Quality Limited Waters

Select the applicable Impairment(s) and/or TMDL(s).

Impairment(s)

☒ Bacteria/Pathogens ☐ Chloride ☐ Nitrogen ☐ Phosphorus

☐ Solids/oil/grease (hydrocarbons)/metals

TMDL(s)

In State:

☐ Assabet River Phosphorus ☐ Bacteria and Pathogen ☐ Cape Cod Nitrogen

☐ Charles River Watershed Phosphorus ☐ Lake and Pond Phosphorus

Out of State:

☐ Bacteria and Pathogen ☐ Metals ☒ Nitrogen ☐ Phosphorus

Clear Impairments and TMDLs

Bacteria/Pathogens

Combination of Impaired Waters Requirements and TMDL Requirements as Applicable

Applicable Receiving Waterbody(ies)	TMDL Name (if applicable)	Add/Delete Row
Connecticut River (MA34-04)	n/a	+ -

Annual Requirements Beginning Year 1

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

Refer to IDDE Plan which includes Outfall Inventory and Priority Ranking (MCM 2, BMP 3-D)

Public Education and Outreach

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

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 1, BMP#s 1-F/H11 to 1-F/H15 & 1-F/H26 to 1-F/H30: Proper Management of Pet Waste, Years 1-5

Permittee or its agents disseminate educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 1, BMP 1-F/H14: Proper Management of Pet Waste, Year 4

Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 1, BMP 1-H1: Proper Septic System Care, Year 3

Nitrogen

Combination of Impaired Waters Requirements and TMDL Requirements as Applicable

Applicable Receiving Waterbody(ies)	TMDL Name (if applicable)	Add/Delete Row
Long Island Sound	Long Island Sound TMDL for Nitrogen (Total Nitrogen)	+ -

Annual Requirements Beginning Year 1

Public Education and Outreach

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

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 1, BMP#s 1-F/H6 to 1-F/H10 and 1-F/H21 to 1-F/H25: Importance of soil test, proper use of fertilizers, and value of grass clippings/proper disposal, Years 1-5

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 1, BMP#s 1-F/H11 to 1-F/H15 and 1-F/H26 to 1-F/H30: Proper Management of Pet Waste, Years 1-5

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 1, BMP#s 1-F/H1 to 1-F/H5 and 1-F/H16 to 1-F/H20: Proper disposal of leaf litter, Years 1-5

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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Establish requirements for the use of slow release fertilizers on permittee owned property currently using fertilizer, in addition to reducing and managing fertilizer use as provided in part 2.3.7.1

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 6, BMP 6-A

Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 6, BMP 6-A and BMP 6-B

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 6, BMP 6-F

Nitrogen Reduction Tracking BMP

Any structural BMPs listed in Table 3 of Attachment 1 to Appendix H already existing or installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the nitrogen removal by the BMP consistent with Attachment 1 to Appendix H. .

The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated nitrogen removed in mass per year by the BMP is found in the following document or website and is updated yearly at a minimum:

Identify any applicable BMPs and implement tracking of nitrogen removal.

Requirements Due by Year 2

Stormwater Management in New Development and Redevelopment

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

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 5, BMP 5-E

Requirements Due by Year 4

Complete a Nitrogen Source Identification Report

The document name (if attached) and/or web address is/are:

Nitrogen Source Identification Report

Stormwater Management in New Development and Redevelopment

Retrofit inventory and priority ranking under 2.3.6.1.b. shall include consideration of BMPs to reduce nitrogen discharges

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 5, BMP 5-D List of Municipal Retrofit Opportunities

Requirements Due by Year 5

Potential Structural BMPs

Evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under Permit part 2.3.6.d.ii or identified in the Nitrogen Source Identification Report that are within the drainage area of the impaired water or its tributaries

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

See MCM 5, BMP 5-D List of Municipal Retrofit Opportunities

Complete a listing of planned structural BMPs and a plan and schedule for implementation

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

City of Northampton
Stormwater Management Program (SWMP)
Attachments

CITY OF NORTHAMPTON, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
125 Locust Street
Northampton, MA 01060

413-587-1570
Fax 413-587-1576

Donna LaScaleia
Director

February 22, 2019

MEMO TO FILE

Re: Documentation for delegation of "Authorized Representative" for NPDES 2016 Massachusetts Small Municipal Separate Storm Sewer System (MS4) General Permit

This document serves to affirm that Donna LaScaleia, Public Works Director, has responsibility for the operation of the MS4 and is hereby designated as an authorized person for signing all reports including but not limited to the Stormwater Management Plan (SWMP), Stormwater Pollution Prevention Plans (SWPPPs), inspection reports, annual reports, monitoring reports, reports on training, and other information required by the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts for City of Northampton. 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 I meet the following requirements to make such a designation as set forth in Part B.11 of Appendix B 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.*

"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."

David Narkewicz, Mayor

MARCH 1, 2019
Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

October 1, 2018

Donna LaScaleia
Department of Public Works
125 Locust Street
Northampton, MA 01060

Dear Ms. LaScaleia:

Thank you for contacting us regarding the Massachusetts 2016 Small MS4 General Permit in your letter(s) dated August 23, 2018. Due to the large volume of consultation requests we have received in the past few months for the MA MS4 General Permit, we have created a letter in accordance with section 7 of the Endangered Species Act that may be used in place of an individual concurrence letter for projects that meet certain criteria. We have reviewed your consultation request for listed species that may be in your project action area and have attached our signed response for you to include in your EPA application, as applicable.

If you have questions or concerns, please contact David Simmons at david_simmons@fws.gov, or phone at (603) 227-6425.

Sincerely yours,

acting for Thomas R. Chapman
Supervisor
New England Field Office

Attachment

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

September 24, 2018

To whom it may concern:

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

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

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

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

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

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

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

Sincerely yours,

Thomas R Chapman
Supervisor
New England Field Office

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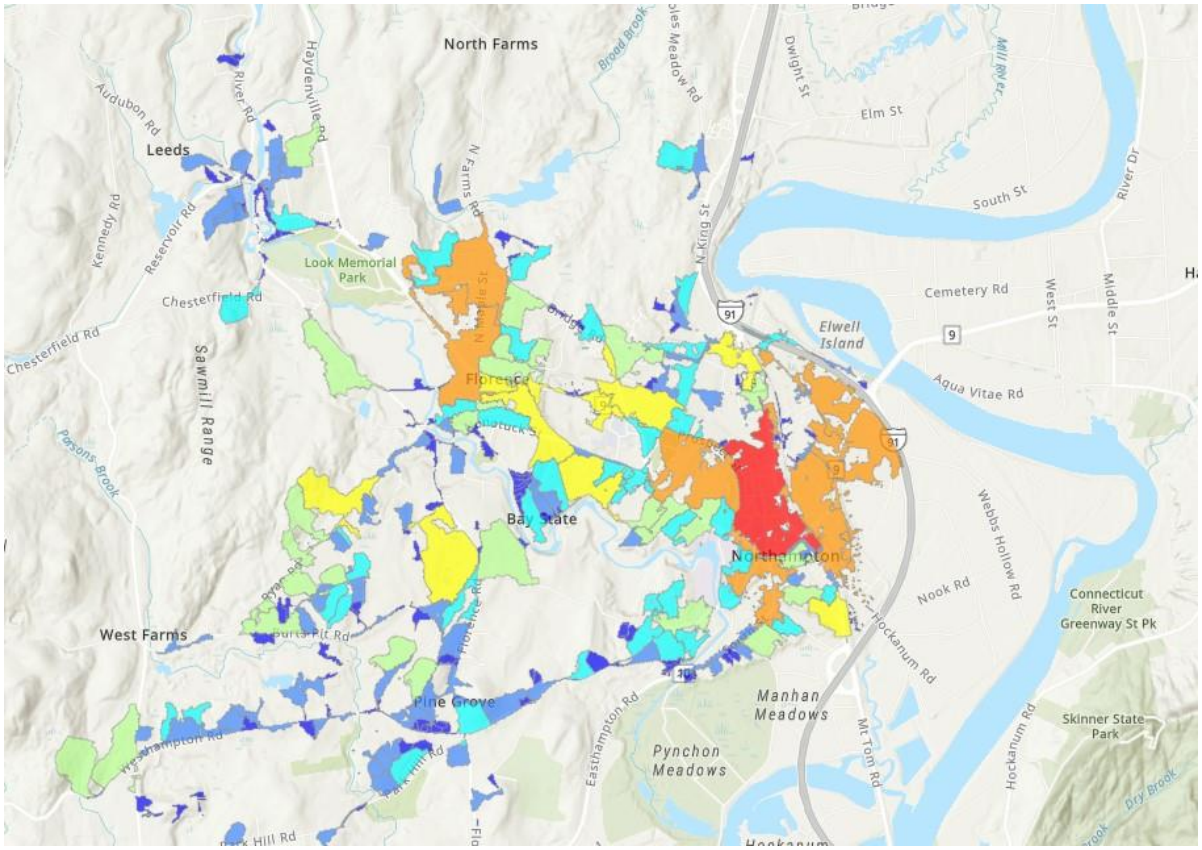
[1] Criterion C includes guidance for project action areas that may contain species for which EPA has already made a determination. These species include the northern long-eared bat (*Myotis septentrionalis*), sandplain gerardia (*Agalinis acuta*), small whorled pogonia (*Isotria medeoloides*), and/or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

Nitrogen Source Identification Report

City of Northampton



Prepared by:
Pioneer Valley Planning Commission (PVPC) and
Northampton DPW
June 2022

Acknowledgements

This document is one among 20 Nutrient Source Identification Reports prepared by the Neponset River Watershed Association (NepRWA) and the Pioneer Valley Planning Commission (PVPC). These reports are meant to provide MS4 permitted municipalities with documents they can finalize and submit to U.S. EPA as part of their Year 4 reporting requirements.

This work is made possible through a grant from the MassDEP Municipal Assistance Program. Project staff from NepRWA and PVPC appreciate the conversation and feedback provided by MassDEP and U.S. EPA staff in working through methodology to prepare these reports. Aside from producing nutrient source identification reports for 20 communities, this project also resulted in the following: lake-pond phosphorous control plan Year 4 submission requirements for two communities; documentation of approach and methods for use by other MS4 permittees across MA in meeting these Year 4 requirements; and setting of the stage for upgrading existing stormwater infrastructure in key high pollutant loading catchments.

NepRWA and PVPC staff are grateful also to the partner communities who joined them in this pilot project. Following is a list of cities and towns that participated:

Agawam
Canton
Dedham
Foxborough
Granby
Longmeadow
Ludlow
Medfield
Milton
Northampton
Quincy
Randolph
Sharon
South Hadley
Southampton
Southwick
Stoughton
Westfield
Westwood
Wilbraham

Table of Contents

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I. Introduction

Nutrients and Water Pollution

The amount of nutrients (phosphorus and nitrogen) delivered to rivers and streams increases greatly with land development and direct discharge of storm flows from certain land uses to receiving waters. In the urban environment, nitrogen and phosphorous come from a variety of sources including organic debris such as fallen leaves, animal and pet waste, lawn and agricultural fertilizers, malfunctioning sewers and septic systems, and atmospheric deposition from car exhaust, among other sources.

Some of these sources also occur in the natural environment. However, the prevalence of paved and impervious areas in the urban and suburban environment, coupled with the availability of storm drain collection systems, allows street runoff containing excess nutrient pollution to quickly move to the nearest waterbody with little or no treatment. Such flows bypass natural processes such as soil filtration and infiltration that would capture and recycle nutrients before they reach waterways in an undeveloped landscape.

As a result, nutrient enriched stormwater runoff has become a major source of water pollution. Nutrient pollution increases undesirable plant and algae growth in waterways, which can be highly toxic to humans and wildlife and reduce oxygen levels in the water. This, in turn, impedes recreation and creates chronic challenges for aquatic life, sometimes leading to fish kills. In freshwater waterways, phosphorous is generally the primary pollutant of concern, while nitrogen becomes the primary concern once freshwater rivers flow into saltwater estuaries and bays.

Regulatory Context

Under the federal and state clean water acts, the Massachusetts Department of Environmental Protection (MassDEP) is charged with establishing water quality standards and determining whether waterways meet these designated standards. MassDEP publishes its *Massachusetts Year 2016 Integrated List of Waters*, also referred to at the 303d Impaired Waters List, identifying waters that do not meet standards. These waterways are referred to as being "impaired" or "water quality limited" based on one or more causes which may include nitrogen, phosphorous, "nutrient/eutrophication biological indicators" or in some cases turbidity or transparency. MassDEP is also charged with preparing waterbody-specific cleanup plans for nutrient pollution known as Total Maximum Daily Loads or TMDLs, though these are yet to be prepared for many impaired waterways.

The City of Northampton ("the City") is subject to the requirements of the US Environmental Protection Agency's (EPA's) 2016 Massachusetts Small MS4 General Permit. One of the requirements of this permit is that Massachusetts communities located in the watershed of Long Island Sound -- which has an approved TMDL for nitrogen (Total Nitrogen) -- shall prepare a Nitrogen Source Identification Report as detailed in Appendix F of the permit. The City drains to several tributaries and the Connecticut River, all waters of which flow to Long Island Sound. There are three listings in the City for waters as impaired in Category 5 of MassDEPs 2016 303d list. Table 1 shows the listing of these waters.

The Nitrogen Source Identification Report must be submitted with the permit year 4 annual report (year ending June 30, 2022 and report due late September 2022). Appendix F of the EPA 2016 MS4 Permit describes the following requirements for the Nitrogen Source Identification Report:

1. Calculation of total urbanized area within the permittee's jurisdiction that is within the Connecticut River Watershed, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to part 2.3.4.6;
2. All screening and monitoring results pursuant to part 2.3.4.7.b., targeting the receiving water segment(s);
3. Impervious area and DCIA for the target catchment;
4. Identification, delineation and prioritization of potential catchments with high nitrogen loading;
5. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.

Table 1. Impaired Receiving Waters

Category 5 - Requiring a TMDL					
Water Body	**Segment ID**	**Description**	**Size**	**Units**	**Impairment**
Mill River	MA34-28	Headwaters (confluence of East and West Branch Mill River, Williamsburg), to outlet Paradise Pond, Northampton.	10	Miles	Escherichia Coli (E. Coli)
Oxbow	MA34066	The waterbody west of Route 91 (bounded on the northeast by Route 91, the southeast by the Manhan River, and the west by Old Springfield Road), Northampton/Easthampton (excluding the delineated segment; Danks Pond MA34019).	149	Acres	(Non-Native Aquatic Plants*) Turbidity
Connecticut River	MA34-04	Confluence with Deerfield River, Greenfield/Deerfield to Holyoke Dam (NATID: MA00973), Holyoke/South Hadley.	34.5	Miles	Escherichia Coli (E. Coli) PCBs In Fish Tissue

II. Data Sources and Analytical Methods for Identifying Nitrogen Loading

Several existing datasets were used to complete this work. Table 2 below lists the utilized data sets and their origin.

Table 2. Data Sources

Existing Data Set	Origin	Date Published/Updated	Link
2016 Land Cover/Land Use	MassGIS	May 2019	https://docs.digital.mass.gov/dataset/massgis-data-2016-land-coverland-use
Soil Survey Geographic (SSURGO) Database for Hampden and Hampshire Counties, Massachusetts	USDA	June 2020	Downloaded through Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm). Hydrologic soil groups extracted using Soil Data Viewer Version 6.1 (https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/geo/?cid=nrcs142p2_053619)
Northampton City Catchments	City of Northampton GIS Files	Current as of 3/18/21	N/A

Impervious area is the portion of the City that is paved, covered by buildings, or otherwise rendered unable to absorb water naturally due to development. Impervious area for the City was calculated using the MassGIS 2016 Land Cover/Land Use data layer which was published in 2019. This data layer maps impervious and pervious land cover by land use type based on aerial photography and other data sources. This was overlaid with the City's data layer for outfall catchment areas (the area draining to each City -owned stormwater discharge point) to estimate total areas and total impervious area discharging to or upstream of nutrient-impaired waterways, as well as to estimate impervious area for each stormwater outfall catchment.

Directly connected impervious area (DCIA), also referred to as "effective impervious cover," is the amount of impervious area that is directly connected to the storm drain system. Most land in the City was developed before the creation of modern requirements to capture, clean, slow, and recharge stormwater runoff using Stormwater Control Measures (SCMs). However, many new development and redevelopment projects constructed in recent years have required the

installation or upgrade of SCMs, such that today some properties have no SCMs, some have SCMs that meet some modern standards, and some have SCMs that are fully compliant with modern standards.

Because site-specific information about the existence of specific SCMs is not available at the parcel level, an estimate of DCIA or effective impervious cover is used to approximate the average level of SCMs installed across the watershed. Estimating DCIA can yield a more specific pollutant loading estimate for a given area. DCIA was estimated based on land use categories following EPA guidance.

To estimate the pollutant loads for nitrogen and/or phosphorous in each catchment, estimated pollutant loading rates for different combinations of land use type, land cover type, and soil type were applied in accordance with guidance in the EPA 2016 MS4 Permit. The individual loading rates for these unique subsections were summed based on catchment, which produced an overall estimated catchment pollutant loading rate.

For a more detailed description of the analytical methods used for this project, please refer to the Methods document in the Appendix.

III. Total Urbanized/MS4 Regulated Area

The total area of the City is approximately 22,879 acres, with a total of 9,370 acres located in the urbanized /MS4 regulated area. All of this MS4 regulated acreage is within the Connecticut River Watershed. The urbanized /MS4 regulated area involves 305 outfall catchment areas.

IV. Impervious Area and Directly Connected Impervious Area

Within MS4 Regulated Area

Table 3 below summarizes the total impervious area (IA) and estimated Directly Connected Impervious Area (DCIA) within the City's MS4 regulated area.

Table 3. Summary of Impervious Area and DCIA within MS4 Regulated Area Catchments

	Acres
Total Impervious Area within MS4 Area	1,240
Total Estimated DCIA within MS4 Area	405

Table 4 below shows information for the 10 catchments within the MS4 regulated area with the most impervious area. The catchments are labeled using the City's identifier for the outfall to which they drain. The table is sorted in descending order of total impervious area. A full report on impervious area and estimates of DCIA for all storm drain outfall catchments in the City can be seen in the on-line ArcGIS data viewer at: https://tinyurl.com/MS4-NSI-PVPC

Table 4. Total Impervious Area and DCIA for the Ten Most Impervious Catchments

Catchment Identifier	Impervious Area (Acres)	Percent Impervious	DCIA (Acres)	Percent DCIA
NORTHAMPTON-62	115.91	66.65%	43.77	25.16%
NORTHAMPTON-77	72.60	60.33%	27.70	23.02%
NORTHAMPTON-406	49.45	40.31%	14.01	11.42%
NORTHAMPTON-132	48.61	43.76%	13.26	11.94%
NORTHAMPTON-60	42.36	67.38%	12.19	19.39%
NORTHAMPTON-47	40.41	36.63%	11.32	10.27%
NORTHAMPTON-57	39.32	34.73%	10.87	9.60%
NORTHAMPTON-121	35.52	57.74%	13.97	22.71%
NORTHAMPTON-127	28.15	61.28%	8.98	19.55%
NORTHAMPTON-79	23.74	75.84%	13.05	41.70%
Top 10 Catchments as % of Total	40.01%		41.76%	

V. Identification, Delineations, and Prioritization of Potential Catchments with High Nitrogen Loading

Estimated Nitrogen Loading

Using the methods described in the Appendix to this report, estimates of nitrogen loading potential were created for each of the City's storm drain outfall catchments.

Table 5 shows the five catchments with the highest estimated nitrogen loading in the entire MS4 area. To access full reporting, showing calculated nitrogen loading estimates for all catchments in City, see the on-line ArcGIS data viewer at: https://tinyurl.com/MS4-NSI-PVPC

Table 5. Estimated Nitrogen Loading for Five Highest-Load Catchments in MS4 Area

Catchment Identifier	Estimated N Load (Lbs/Yr)
NORTHAMPTON-62	1805.91
NORTHAMPTON-77	1162.34
NORTHAMPTON-406	862.01
NORTHAMPTON-132	742.19
NORTHAMPTON-57	673.83
Top 5 as a % of Total City Load	24.20%

Note these are estimated loadings based on soil type, land use and estimated DCIA (e.g. typical level of SCMs in City). Actual loading may vary considerably from site to site depending on what SCMs are actually present, and regional studies such as the Charles River Phosphorous TMDL have indicated that the default DCIA assumptions used by EPA are somewhat optimistic, such that actual loading rates may be higher. However, these estimates provide a valuable guide to help identify those areas of the City that should be the highest priorities for interventions to begin reducing pollutant loading.

Outfall Screening Monitoring Results

As of the writing of this report, outfall screening results are not available. Once they become available, they will be included in this section and the findings shall be incorporated into the determination of the highest priority catchments with respect to nitrogen loading.

Catchment Prioritization

Since no outfall screening data are currently available to improve projections, this report is prioritizing the catchments based solely on the nitrogen loading estimates, in the order shown in Table 5. When outfall screening data become available, the list of catchments should be re-examined and the "Top 5" list should be updated based on these real-world data.

VI. Potential Retrofit Opportunities

Method

Building on the method described within the *Pioneer Valley 2014 Regional Green Infrastructure Plan* and through subsequent pilot projects in Springfield and Agawam, PVPC has developed a screening process approach to identify public properties that might be most appropriate for green infrastructure stormwater retrofit locations.

As part of this work, PVPC developed an on-line map/data screening tool to identify potential retrofit opportunities using ESRI's application builder (referred to as *on-line ArcGIS data viewer*). The use of this interface with these layers can help immensely in facilitating decision making. The on-line ArcGIS data viewer displays municipal, state, federal, and private properties by total score of suitability for green infrastructure retrofitting and allows the end user to further explore the values associated with the suitability score for each parcel. Input values can be viewed by either clicking on a parcel to display a "pop-up box" or by viewing the master data table at the bottom of the screen.

Screening considerations, with each their own associated score, include:

- hydrologic soil group
- surface waters listed in Category 4a (TMDL completed) or 5 (Impaired/Requiring a TMDL) on the 2016 Massachusetts List of Integrated Waters, Environmental Justice Areas, size of impervious areas,
- location within the MS4 regulated area
- outfall catchment area phosphorus or nitrogen loading rate below mean value
- outfall catchment area phosphorus or nitrogen loading rate above mean value

The outfall catchment area bullet points above are the latest updates to the screening tool based on the work of this project on nutrient source identification reports. These shape files were developed in ArcMap for Desktop and displayed in the on-line viewer.

For local decision making, considerations in this screening process can be further supplemented and fine-tuned based on local priorities. For some communities, localized flooding has been an important additional consideration. PVPC has also been recommending that where possible communities add tree canopy analysis in the ranking so that investments for improved stormwater pollution control through vegetated systems might also possibly serve to cool summer temperatures in neighborhoods where there are few trees.

More information on the retrofit opportunity screening tool is provided in the Appendix on Methodology to this report.

High Priority Parcels Based on Nitrogen Loading

PVPC mapped, evaluated, and prioritized all parcels within the MS4 regulated area for Nitrogen loading. Shape files were developed in ArcMap for Desktop and displayed in the on-line viewer. While Table 6 below shows highest-priority parcels owned by the municipality, prioritization of state, federal and private parcels is available in the on-line viewer.

Table 6. High-Priority Parcels to be Considered for SCM Development for Nitrogen Loading

Address	Parcel ID	Outfall Catchment	Nitrogen BMP Score
Jackson Street School	24A-042-001	90	100/100
Hampton Ave Parking Lot	32C-345-001	59	97.5/100
Veterans Field/Old South St Parking Lot	31D-171 & 31D-237	60	97.5/100
Northampton DPW	23B-014-001	127	95/100
Ryan Road School	29-104-001	202	95/100
Smith Vocational High School	23B-047-001	127	94/100
King Street Right-of-Way and ROWs in Priority Catchments	n/a	62, 77, 406, 132, 57	

ArcGIS On-line Data Viewer

The on-line ArcGIS data viewer provides far greater capability in reviewing individual catchments and associated nitrogen loading data to facilitate analysis. From this tool, it is possible to generate analysis that includes the following:

- Impervious and DCIA Amounts for all Catchments, Sorted by Impervious Area
- Estimated Nitrogen Loading for All Catchments
- Ranking of Municipal-Owned Parcels for Nitrogen Removal

The results of this report provide a valuable starting point for the next phase of requirements in Appendix F of the 2016 MS4 Permit which are due by the end of permit year 5 (6/30/2023), which include:

1. Evaluate all properties identified as presenting retrofit opportunities or areas for structural BMP installation under permit part 2.3.6.d.ii. or identified in the Nitrogen Source Identification Report. The evaluation shall include:
    a. The next planned infrastructure, resurfacing or redevelopment activity planned for the property (if applicable) OR planned retrofit date;
    b. The estimated cost of redevelopment or retrofit BMPs; and
    c. The engineering and regulatory feasibility of redevelopment or retrofit BMPs.

2. Provide a listing of planned structural BMPs and a plan and schedule for implementation in the year 5 annual report.

To access the screening tool, see: https://tinyurl.com/MS4-NSI-PVPC

CITY OF NORTHAMPTON

Assessment of Current Street Design and Parking Lot Guidelines That Affect the Creation of Impervious Area June 2022

OVERVIEW & ASSESSMENT

To comply with Section 2.3.6(b) of the 2016 Massachusetts MS4 Permit, Northampton DPW staff conducted a review of design guidelines in relevant City ordinances and regulations to identify revisions that could reduce the amount of impervious area proposed in new and redevelopment projects. DPW staff reviewed the City's Subdivision Regulations, Zoning Ordinance, Stormwater Management Ordinance (as proposed but not yet adopted), Complete Streets Policy and Wetland Ordinance using an Excel template titled "PVPC Street Design and Green Infrastructure Code Review Checklist (2022)" which was created by the Pioneer Valley Planning Commission. Numerous best practices identified in the PVPC checklist are already present in the City's ordinances and regulations, including:

1) Minimum open space requirements – Most zoning districts require a percentage of a parcel to remain as "open space," which serves to limit the amount of impervious area that can be constructed on a lot ("open space" is defined as "the space on a lot unoccupied by buildings or structures, unobstructed to the sky by manmade objects other than walks, swimming pools, and terraced areas");
2) Setbacks in business zones that require tree belts and vegetative screening;
3) Minimal or no frontage requirements in the most densely-developed areas of the City;
4) Shared driveways allowed in all zoning districts;
5) Requirements for subdivisions and Major Projects to incorporate Low-Impact Design (LID) elements or explain why LID features are not feasible;
6) Alternative dead-end road designs including cul-de-sacs that require vegetated islands;
7) Minimal parking requirements and small stall dimensions (8.5 feet by 18 feet) to limit construction of impervious area and additional parking reductions (up to 20%) allowed with Planning Board approval.

Additionally, the City has made an effort to reduce impervious areas and add LID features to improve stormwater treatment and infiltration when feasible as part of roadway and other City reconstruction projects. Since 2011, eleven road and park reconstruction projects have yielded a net reduction of over 23,000 sf of impervious area. Seven of these projects contained LID features such as bioswales, rain gardens or infiltration basins/trenches that are designed to treat stormwater from over 92,000 sf of impervious area.

These construction projects and the above list of zoning practices represent many best practices already taking place in the City, yet there are still opportunities for ordinance revisions that could further reduce the amount of impervious area created by future development projects. Northampton DPW staff coordinated with Northampton Office of Planning and Sustainability

(OPS) staff to review possible ordinance revisions and strategized how to achieve greater reductions in impervious area and increased implementation of LID measures in new development projects. In general, the lack of large areas of developable land in the City and the implementation of City policies encouraging development in the urban core and village centers is expected to result in little to no new subdivision developments or new road construction projects in the foreseeable future. For these reasons, the City's strategy to reduce impervious area and increase LID designs in Northampton is focused on the revisions proposed below to amend the parking standards and LID requirements that affect redevelopment projects.

PROPOSED REVISIONS

The Northampton DPW and Northampton OPS staff will continue to coordinate and work to make the following revisions to reduce impervious area and increase LID designs in new development and redevelopment. The estimated timeline for implementation of each revision is identified in parentheses.

1) In the Zoning Ordinance, Chapter 350-8.6, the parking requirements will be amended to create more scenarios for obtaining a reduction in parking by the Planning Board, including when a development project is located near public transit or is in a walkable area or urban center. The parking standards will be revised to further incentivize shared parking facilities by changing the process used (Site Plan Review versus the current Special Permit) and adding language to facilitate the review process (e.g., the proponent must provide proof of limited use and secure cross easements). (1-2 years or 2023-2024)

2) The language in the Zoning Ordinance related to the design of parking lots will be amended to explicitly encourage the required vegetated areas to serve as infiltration and stormwater treatment features. (2-3 years; 2024-2025)

3) The language in the Major Projects section of the Zoning Ordinance (Chap 350-11.2) and in the Subdivision Regulations will be revised to require that applicants must explain why LID features are not feasible on a site, if the applicant proposes a more conventional site design. (2-3 years; 2024-2025)