



**Stormwater Management Program
(SWMP)**

Town of Nahant

334 Nahant Road, Nahant, MA, 01908

EPA NPDES Permit Number: MAR041051

September 22, 2021

Prepared for:

Town of Nahant

Prepared by:

Stantec Consulting Services, Inc.



STORMWATER MANAGEMENT PROGRAM (SWMP)



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Abbreviations

ABBREVIATIONS

BMP	Best Management Practice
CZM	Coastal Zone Management
DPW	Department of Public Works
IDDE	Illicit Discharge Detection and Elimination
MassDEP	Massachusetts Department of Environmental Protection
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
SRP	Spill Response Plan
SSO	Sanitary Sewer Overflow
SWIM	Safer Waters in Massachusetts
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
US EPA, EPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service



STORMWATER MANAGEMENT PROGRAM (SWMP)

Certification

1.0 CERTIFICATION

Authorized Representative: 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 of the Permit or by a duly authorized representative of that person in accordance with Appendix B, Subsection 11.B of the Permit. 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 in Appendix A.

"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: Antonio Barletta

Signature: _____

Date: _____



STORMWATER MANAGEMENT PROGRAM (SWMP)

Background

2.0 BACKGROUND

2.1 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.

2.2 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.

2.3 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.



STORMWATER MANAGEMENT PROGRAM (SWMP)

Background

2.4 NAHANT SPECIFIC MS4 BACKGROUND

The Town of Nahant, located within an Urbanized Area as identified by the latest Decennial (2010) census and designated as a regulated community, has applied for coverage under NPDES General Permit for Stormwater Discharges.

The Town was permitted under the 2003 Small MS4 Permit. During that Permit term, the Town created a SWMP, addressed storm system mapping, and submitted Annual Reports. Beyond addressing minimum regulatory requirements, the Town developed additional mapping including storm drain manholes and catch basins.

The Town has completed many activities to address the education and outreach requirements of the 2003 Permit, including posting educational information on their website, providing information about nearby annual household hazardous waste collection days via its website and message signs, and providing information about proper pet waste disposal. In this Permit term, the Town will continue to distribute educational materials and will work to enhance the program.

The Town has demonstrated their commitment to public involvement and participation in the program by providing residents with access to the stormwater management plan.

The Town developed and administered an IDDE Program as part of the 2003 Permit, which included developing a stormwater map showing outfalls and receiving waters, reviewing the Town's Stormwater By-Law, and dry weather screening and sampling for MS4 outfalls. The IDDE plan is one of the most demanding tasks in the 2016 Permit, and the Town will continue to advance efforts from the 2003 Permit term.

To properly manage and enforce construction site stormwater runoff, the Town developed Stormwater By-Laws which became effective in 2015. The Town will review these By-Laws to determine whether changes are needed to fully address new requirements.

The Town has an operations and maintenance program that already meets many of the Permit requirements for catch basin cleaning, street sweeping and management, winter road maintenance, and BMP maintenance.

The Town has demonstrated successful stormwater management through the adherence to the 2003 Permit. Although some updates and additions are necessary, the Town has a substantial stormwater management program ready for the new Permit.

The Town has been submitting an MS4 Annual Report to the US EPA since the 2003 Permit term. This yearly reporting requirement will continue, and as described in Section 8, residents will have an opportunity to review and comment on progress every year. In addition, this SWMP is not meant to be a static document, and as the Town's efforts progress and evolve, so too will this program. The SWMP will be updated continuously and the most up to date version of this program will be made available to residents through the Town's website.



STORMWATER MANAGEMENT PROGRAM (SWMP)

Small MS4 Authorization

3.0 SMALL MS4 AUTHORIZATION

A Notice of Intent (NOI) was submitted to EPA on October 2, 2018. The EPA requested additional information, and a response was provided April 2019. The NOI and follow-up response can be found in Appendix B.

An Authorization to Discharge was granted on June 4, 2019 and the authorization letter can be found in Appendix C.



STORMWATER MANAGEMENT PROGRAM (SWMP)

Stormwater Management Program Team

4.0 STORMWATER MANAGEMENT PROGRAM TEAM

The SWMP Team is responsible for MS4 program implementation.

4.1 SWMP TEAM COORDINATOR

Antonio Barletta, Town Administrator
Nahant Town Hall
334 Nahant Road
Nahant, MA, 01908
Phone: (781) 581-9927
abarletta@nahant.org

4.2 SWMP TEAM

Zach Taylor, DPW Superintendent
Flash Road
Nahant, MA 01908
Phone: (781) 581-0026
ztaylor@nahant.org

Tim Lowe, DPW General Foreman
Flash Road
Nahant, MA 01908
Phone: (781) 581-0026
tlowe@nahant.org



STORMWATER MANAGEMENT PROGRAM (SWMP)

Receiving Waters

5.0 RECEIVING WATERS

Table 1 summarizes the number of stormwater outfalls discharging to “impaired waters” within the boundaries of the Town of Nahant regulated area based on the Final Massachusetts Year 2016 Integrated List of Waters produced by MassDEP every two years. These are water bodies that do not meet water quality standards for one or more designated use(s) such as recreation or aquatic habitat.

Table 1: Receiving Waters Listed in the Massachusetts Year 2014 Integrated List of Waters

Waterbody Segment that Receives Flow from the MS4	Number of Outfalls into Receiving Water Segment	Pollutants Causing Impairments	Category ¹
Lynn Harbor (MA93-52)	5	Fecal Coliform	4a
Lynn Harbor (MA93-53)	6	Fecal Coliform	4a
Nahant Bay (MA93-24)	17	Fecal Coliform	4a
TOTAL:	28		

¹ Category 4a includes waters for which the required TMDL(s) have already been completed and approved by EPA

Table 2 lists the number of stormwater outfalls discharging to waterbodies not included in the Massachusetts Year 2016 Integrated List of Waters. This list primarily contains outfalls discharging to Nahant Harbor, as well as inland outfalls discharging to wetlands.

Table 2: Receiving Water Not Listed in the Massachusetts Year 2014 Integrated List of Waters

Waterbody that Receives Flow from the MS4	Number of Outfalls into Receiving Water Segment
Nahant Harbor	10
Tributary to Lowlands Marsh	7
Tributary to Kelly Green Marsh	1
Wetland Tributary to Thicket	3
Wetland Tributary to Nahant Harbor	1
Kelly Green Marsh	4
TOTAL:	26



6.0 SPECIAL ELIGIBILITY DETERMINATIONS

6.1 ENDANGERED SPECIES

The results of U.S. Fish and Wildlife Service endangered species screening determination are required within one year of the permit effective date and are provided in Appendix B with the NOI. The Town certified eligibility according to USFWS Criterion B. In order to meet the documentation requirements for Criterion B, the NOI includes a copy of the IPaC Official Species List and the USFWS consultation letter dated September 28, 2018 for certifying under eligibility Criterion B.

The IPaC Official Species List indicates there is one (1) Threatened Species; the Northern Long-eared Bat (*Myotis septentrionalis*), that is potentially present at the permitted site. The USFWS consultation letter states that Permit activities may affect, but are not likely to adversely affect, certain species when specific conditions are met. The Town has reviewed the specific conditions and confirms they are met.

6.2 HISTORIC PROPERTIES

The results of the historic property screening investigations are required within one year of the permit effective date and are provided with the NOI in Appendix B. The Town certified eligibility for Criterion A because there is no MS4 work proposed, including construction, that would affect historic properties.



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

7.0 MINIMUM CONTROL MEASURES (MCM)

7.1 MCM 1: PUBLIC EDUCATION AND OUTREACH

The Permit requires that “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.”

The educational program shall include education and outreach efforts for the following four audiences:

- (1) Residents,
- (2) Businesses, institutions (churches, hospitals), and commercial facilities,
- (3) Developers (construction), and

The Town of Nahant does not contain any areas zoned for industrial use; therefore, the Industrial Facilities target audience is not applicable.

In accordance with Appendix F, the Town will also distribute annual messages encouraging the proper management of pet waste, including noting any existing ordinances where appropriate. The last known septic system in Town was filled in during the past year. Therefore, Public Education and Outreach related to septic systems is no longer applicable.

The Town will partner with Nahant S.W.I.M. (Safer Waters in Massachusetts) and the Massachusetts North Shore Coalition GREENSCAPES Program to implement the following BMPs.

7.1.1 2019 Stormwater Brochure

BMP Number	BMP 1-01 – <i>Complete</i>
BMP Description	Monarch butterfly flyer mailed to all households in Nahant. Flyer includes information about benefits of rain gardens for monarchs and for water quality.
Targeted Audience	Residents
Responsible Department	Town Administrator/ Nahant SWIM
Measurable Goals	Number of mailings (all households)
Message Date(s)	November 2019



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Minimum Control Measures (MCM)

7.1.2 2019 Drain Plaques

BMP Number	BMP 1-02 – <i>Complete</i>
BMP Description	Installation by DPW of fifty (50) “No Dumping Drains to Ocean” plaques donated by Nahant SWIM to the Town. This message is different than what was proposed in the NOI because the Town is looking for more diverse types of messaging to reach different audiences including visitors as well as businesses and residents.
Targeted Audience	Residents, Visitors, Businesses, Institutions, and Commercial Facilities
Responsible Department	Town Administrator/ Nahant SWIM
Measurable Goals	Number of plaques (50)
Message Date(s)	Installed July 2019

7.1.3 TBD 2022

BMP Number	BMP 1-03
BMP Description	TBD
Targeted Audience	Residents
Responsible Department	Town Administrator/ Nahant SWIM
Measurable Goals	TBD
Message Date(s)	Planned for FY 2022

7.1.4 TBD 2022

BMP Number	BMP 1-04
BMP Description	TBD
Targeted Audience	Businesses, Institutions, and Commercial Facilities
Responsible Department	Town Administrator/ Nahant SWIM
Measurable Goals	TBD



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

Message Date(s) Planned for FY 2022

7.1.5 Brochure to Developers 1

BMP Number	BMP 1-05
BMP Description	Distribute the Builder's Guide to LID (brochure) developed by MassDEP or similar.
Targeted Audience	Developers (construction)
Responsible Department	DPW Operations
Measurable Goals	One distribution per year
Message Date(s)	2021

7.1.6 Brochure to Developers 2

BMP Number	BMP 1-06
BMP Description	Distribute the EPA Stormwater Pollution Prevention for Small Residential Construction Sites brochure or similar.
Targeted Audience	Developers (construction)
Responsible Department	DPW Operations
Measurable Goals	One distribution per year
Message Date(s)	2022

7.1.7 TMDL Requirements

The Town will implement the following BMPs in accordance with requirements related to the pathogen TMDL for Lynn Harbor and Nahant Bay:

- Provide an annual message to residents encouraging the proper management of pet waste, including noting any existing ordinances where appropriate. This requirement has been met by posting a message regarding pet waste on the Town's website which includes a reference to the by-law regarding disposal of feces (http://www.nahant.org/departments/dog_officer.shtml).
- Disseminate educational material to dog owners at the time of issuance or renewal of dog licenses. Educational materials will describe the detrimental impacts of improper management of



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

pet waste, requirements for waste collection and disposal, and penalties for non-compliance (BMP 1-07). Refer to Town of Nahant Police By-Laws Section 13. Control of Dogs.

- Provide information to owners of septic systems about proper maintenance in any catchment that discharges to Lynn Harbor and Nahant Bay. The last known septic system in Town was filled in during Permit Year 2 (2019). Therefore, Public Education and Outreach related to septic systems is no longer applicable.

7.1.8 Additional BMPs

The Town may implement the following additional Public Education and Outreach BMPs:

- Post stormwater education information on the Town's webpage, including posting of EPA video "After the Storm"
- Conduct a workshop on organic lawn care to introduce organic lawn care practices that minimize application of pollutants

7.2 MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION

The Permit states that "The permittee shall provide opportunities to engage the public to participate in the review and implementation of the permittee's SWMP."

Table 3 provides a summary of required BMPs related to public involvement and participation with the SWMP, with associated due dates. The table will be updated annually to track progress.

Table 3: MCM 2 Summary of Permit Requirements

BMP Number	BMP	Date Due	Date Completed	Updated
2-01	SWMP Posted on website	July 1, 2019	Ongoing	9/22/2021
2-02	Public Participation	Ongoing	Ongoing	9/22/2021

7.2.1 Public Review of Stormwater Management Program and Annual Reports

BMP Number BMP 2-01

Location of SWMP https://nahant.org/wp-content/uploads/2021/01/Storm_Water_Management_Report_June_28_2019.pdf



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

Measurable Goals Continue to make the SWMP and Annual Reports available to the public via the Town's website.

7.2.2 Public Participation in SWMP Implementation

BMP Number 2-02

BMP Description: The Town implements the following Public Involvement and Participation BMPs to allow the public to participate in implementation of the SWMP:

- The Town conducts household hazardous waste/used oil collection to allow the public to properly dispose of hazardous waste.
- The Town conducts metal recycling day (last Saturday of every month) and white goods pickup (daily as needed) to allow the public to properly dispose of recyclable goods.
- The Town (DPW) provides assistance with local organized cleanup activities such as providing tools and equipment for Annual Beach Cleanups:
 - Annual Autumn Beach Cleanup Day (9/21/2019, 10/11/2020)
 - Annual Spring Beach Cleanup Day (6/14/2020)

7.3 MCM 3: ILLICIT DISCHARGE DEECTION AND ELIMINATION (IDDE) PROGRAM

The Permit states that “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.”

Table 4 provides a summary of required BMPs related to the IDDE program with associated due dates. The table will be updated annually to track progress.

Table 4: MCM 3 Summary of Permit Requirements

BMP Number	BMP Description	Date Due	Date Completed	Updated
3-01	SSO Inventory	July 1, 2019	Ongoing	9/22/2021
3-02	Phase I System Mapping	July 1, 2020	6/25/2021	
3-02	Phase II System Mapping	July 1, 2028		



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

3-03	Written IDDE Plan	July 1, 2019	6/28/2019	6/25/2021
3-03	Assessment and Initial Priority Ranking of Outfalls/ Interconnections	July 1, 2019	6/28/2019	
3-03	Follow-up Ranking	July 1, 2021		
3-03	Written Catchment Investigation Procedure	January 1, 2020	6/25/2021	
3-04	Catchment Investigations for Problem Outfalls	Begin by July 2020/ Finish by July 2025		
3-04	Catchment Investigations with Potential Sewer Input	Begin after Problem Outfall Investigations/Finish by July 2025		
3-04	Catchment Investigations for High and Low Priority Outfalls	Begin after Problem Outfall Investigations/Finish by July 2028		
3-05	Training	Annually	Annual	
3-06	Dry Weather Screening and Sampling	July 1, 2021		
3-07	Wet Weather Sampling	Complete during Catchment Investigations		

Table 5: MCM 3 Implementation Schedule

IDDE Program Requirement	Estimated Completion Date from July 1, 2018 (Effective Date of 2016 Permit)						Status
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years	
Written IDDE Program	X						Complete
SSO Inventory	X						Ongoing
Written Catchment Investigation Procedure		X					Complete
Phase I Mapping			X				Complete
Phase II Mapping						X	In Progress
IDDE Regulatory Mechanism or By-law				X			In Progress
Dry Weather Outfall Screening				X			Not Started
Follow-up Ranking of Outfalls and Interconnections				X			Not Started



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

Catchment Investigations – Problem Outfalls					X		Not Started
Catchment Investigations – all Problem, High and Low Priority Outfalls						X	Not Started

7.3.1 IDDE Legal Authority

The Town of Nahant passed and adopted a Stormwater By-Law on April 25, 2015, and it was approved by the Attorney General of Massachusetts on August 31, 2015. The By-Law is provided in Appendix D.

Link to By-Law: <https://docplayer.net/172697034-Storm-water-by-law-article-xvi-general-bylaw-town-of-nahant.html>

Department Responsible for Enforcement: Planning Board

The Town will review the Stormwater By-Law and update as needed to meet new requirements of the Permit. The Town will work through the Planning Board to adopt rules and regulations to effectuate the purposes of the By-Law to meet the required BMPs of MCM3. This work is ongoing.

7.3.2 Sanitary Sewer Overflow (SSO) Inventory

BMP Number BMP 3-01

SSOs are discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause serious water quality problems and property damage, and threaten public health. SSOs can be caused by blockages, line breaks, sewer defects that allow stormwater and groundwater to overload the system, power failures, improper sewer design, and vandalism.

The Permit requires that the Town of Nahant identify all known locations where SSOs have discharged to the MS4 within the previous five (5) years. This shall include SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems. **Five (5) known SSOs have occurred starting five years prior to the Permit issuance to date (during the period from June 2014 through June 2021).** All five SSOs occurred in the same general location outside the Town of Nahant (in Lynn, MA) but were related to the Town of Nahant's drainage system. The Town has hired an engineer to design and permit the replacement of the sewer force main in this location. As of June 2021, design is complete and the engineer is preparing bid documents.

An SSO Inventory is included in Appendix E and will be updated annually and maintained as a part of the SWMP. The Inventory includes the following information, if available:



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

1. Location (approximate street crossing/address and receiving water, if any);
2. A clear statement of whether the discharge entered a surface water directly or entered the MS4;
3. Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge);
4. Estimated volume(s) of the occurrence;
5. Description of the occurrence indicating known or suspected cause(s);
6. Mitigation and corrective measures completed with dates implemented; and
7. Mitigation and corrective measures planned with implementation schedules.

Upon detection of an SSO, the Town will eliminate it as expeditiously as possible and take interim measures to minimize the discharge of pollutants to and from its MS4 until the SSO is eliminated. Upon becoming aware of an SSO to the MS4, the Town will provide oral notice to EPA, MassDEP, and others as applicable within 24 hours, and written notice to EPA and MassDEP within five (5) days of becoming aware of the SSO occurrence.

The applicable MassDEP contact is:

Northeast Region
(978) 694-3215
205B Lowell Street
Wilmington, MA 01887

24-hour Emergency Line
1-888-304-1133

The EPA contact is:

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

7.3.3 Map of Storm Sewer System

BMP Number BMP 3-02

The Permit includes the following requirements for MS4 mapping:



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

- Phase I (complete by year 2; June 30, 2020): Map 100% of outfalls and receiving 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. *The Town has completed Phase I mapping requirements as of June 2021. The Phase I Map is included with the IDDE Plan in Appendix F. The Town does not have any interconnections with other MS4s or municipally-owned stormwater treatment structures.*
- Phase II (completed by year 10; June 30; 2028): 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. Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit. *The Town has already completed some of the Phase II mapping requirements, including stormwater manholes and catch basins, and the municipal sanitary sewer system.*

7.3.4 Written IDDE Program

BMP Number BMP 3-03

The Permit requires a written IDDE Plan to be developed by year 1 (June 30, 2019). The IDDE Plan must include the following elements:

- Outfall/interconnection inventory and initial ranking
- Written procedures for dry weather outfall screening and sampling
- Written procedures for catchment investigations (due January 1, 2020)

The Town's IDDE Plan is provided in Appendix F and includes an outfall inventory and ranking and written procedures for outfall screening and catchment investigations.

7.3.5 Implement IDDE Program

BMP Number BMP 3-04

The Town will implement catchment investigations according to program and permit conditions.

7.3.6 Employee Training

BMP Number BMP 3-05

The Town continues to provide annual stormwater training to employees during regularly scheduled staff meetings, including IDDE implementation. Training records are provided in Appendix G.



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

7.3.7 Dry Weather Screening

BMP Number BMP 3-06

The Town will conduct dry weather screening in accordance with the outfall screening procedures identified in the IDDE Plan, and permit conditions. This work is scheduled for the Fall of 2021.

Measurable Goals: Complete 3 years after effective date of permit.

7.3.8 Wet Weather Screening

BMP Number BMP 3-07

The Town will conduct wet weather screening in accordance with the outfall screening procedures identified in the IDDE Plan, and permit conditions.

Measurable Goals: Complete 10 years after effective date of permit

7.3.9 Ongoing Screening

BMP Number BMP 3-08

The Town will conduct dry weather and wet weather screening as necessary according to permit conditions.

Measurable Goals: Complete ongoing outfall screening upon completion of IDDE program

7.4 MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

The Permit states that “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.”

The Town of Nahant passed and adopted a Stormwater By-Law on April 25, 2015, and it was approved by the Attorney General of Massachusetts on August 31, 2015. The Town Planning Board is responsible for enforcement. The Stormwater By-Law covers the topics of MCM 4 as summarized in Table 6. The Town will review the Stormwater By-Law and update as needed to meet new requirements of the Permit.

The Stormwater By-Law is provided in Appendix D.

Link to By-Law: <https://docplayer.net/172697034-Storm-water-by-law-article-xvi-general-bylaw-town-of-nahant.html>



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

Table 6: MCM 4 Summary of Permit Requirements

BMP Number	BMP Description	Date Due	Date Completed	Updated
	Sediment and Erosion Control Ordinance	May 1, 2008	April 25, 2015	
4-01	Site Inspection Procedures	June 30, 2019	April 25, 2015	
4-02	Site Plan Review Procedures	June 30, 2019	April 25, 2015	
4-03	Erosion and Sediment Control	June 30, 2019	April 25, 2015	
4-04	Waste Control	June 30, 2019	April 25, 2015	

7.4.1 Site Inspections and Enforcement of Sediment and Erosion Control Measures Procedures

BMP Number BMP 4-01

Description: Complete written procedures of site inspections and enforcement procedures. The procedures shall clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The program shall provide that the permittee may, to the extent authorized by law, impose sanctions to ensure compliance with the local program. *Site inspection and enforcement procedures are documented in the SWMP in the By-Law provided in Appendix D. The By-Law is enforced by the Planning Board*

Responsible Department/Parties: Planning Board and Conservation Commission

Measurable Goals: Complete within 1 year of the effective date of permit. *The Town adopted the By-Law in 2015.*

7.4.2 Site Plan Review Procedures

BMP Number BMP 4-02

Description: Complete written procedures of site plan review and begin implementation. The site plan review procedure will include a pre-construction review by the permittee of the site design, the planned operations at the construction site, planned BMPs during the construction phase, and the planned BMPs to be used to manage runoff created after development. The review procedure will incorporate procedures for the consideration of potential water quality impacts, and procedures for the receipt and consideration of information submitted by the public. The site plan review procedure will also include evaluation of opportunities for use of low impact design and green infrastructure. When the opportunity exists, project proponents will be encouraged to incorporate these practices into the site design. The



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

procedures for site inspections will include the requirement that inspections occur during construction of BMPs as well as after construction of BMPs to ensure they are working as described in the approved plans, clearly defined procedures for inspections including qualifications necessary to perform the inspections, the use of mandated inspection forms if appropriate, and procedure for tracking the number of site reviews, inspections, and enforcement actions.

Responsible Department/Parties: Planning Board and Conservation Commission

Measurable Goals: Complete within 1 year of the effective date of permit. *The Town adopted the By-Law in 2015.*

7.4.3 Erosion and Sediment Control

BMP Number BMP 4-03

Description: Adoption of requirements for construction site operators performing land disturbance activities within the MS4 jurisdiction that result in stormwater discharges to the MS4 to implement a sediment and erosion control program. The program will include BMPs appropriate for the conditions at the construction site.

Responsible Department/Parties: Planning Board and Conservation Commission

Measurable Goals: Complete within 1 year of the effective date of permit. *The Town adopted the By-Law in 2015.*

7.4.4 Waste Control

BMP Number BMP 4-04

Description: Adoption of requirements to control wastes, including but not limited to: discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes, which may not be discharged to the MS4.

Responsible Department/Parties: Planning Board and Conservation Commission

Measurable Goals: Complete within 1 year of the effective date of permit. *The Town adopted the By-Law in 2015.*

7.5 MCM 5: POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

The Permit states that “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 MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

stormwater after construction on new or redeveloped sites and to ensure proper maintenance of installed stormwater controls.”

The Town of Nahant passed and adopted a Stormwater By-Law on April 25, 2015, and it was approved by the Attorney General of Massachusetts on August 31, 2015. The Town Planning Board is responsible for enforcement. The Stormwater By-Law is provided in Appendix D.

Link to By-Law: <https://docplayer.net/172697034-Storm-water-by-law-article-xvi-general-bylaw-town-of-nahant.html>

The Town will review the Stormwater By-Law and update as needed to meet new requirements of the Permit. The Town will work through the Planning Board to adopt rules and regulations to effectuate the purposes of the By-Law to meet the required BMPs of MCM5.

Table 7: MCM 5 Summary of Permit Requirements

BMP Number	BMP Description	Date Due	Date Completed	Updated
5-01	Post-Construction Regulations Update	July 1, 2021	Ongoing	
5-02	List of Retrofit Opportunities	July 1, 2022; annually report progress		
5-03	GI Design Opportunities Report	July 1, 2022; annually report progress		
5-04	Street Design Assessment Report	July 1, 2022; annually report progress		

7.5.1 Stormwater Controls and Management Practices Compliance

BMP Number BMP 5-01

BMP Description: Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook. Establish procedures to require submission of as-built drawings for completed projects; and ensure long term operation and maintenance will be a part of the SWMP.

Measurable Goals: Consists of adoption, amendment, or modification of a regulatory mechanism to meet requirements. Complete 3 years after effective date of permit.

7.5.2 List of Municipal Retrofit Opportunities

BMP Number BMP 5-02



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

BMP Description: Identify at least five (5) permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas, and update annually.

Measurable Goal: Complete 4 years after effective date of permit and report annually on retrofitted properties.

7.5.3 Green Infrastructure Report

BMP Number BMP 5-03

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

Measurable Goal: Complete 4 years after effective date of permit and implement recommendations of report.

7.5.4 Street Design and Parking Lot Guidelines Report

BMP Number BMP 5-04

BMP Description: Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to facility design standards for streets and parking lots can be modified to support low impact design options.

Measurable Goal: Complete 4 years after effective date of permit and implement recommendations of report.

7.6 MCM 6: GOOD HOUSEKEEPING AND POLLUTION PREVENTION FOR PERMITTEE OWNED OPERATIONS

The Permit states that “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.”

COVID-19 led to a staffing shortage and delayed completion of several MCM 6 requirements. The Town is working to catch up during Year 4 (FY 2022).



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

Table 8: MCM 6 Summary of Permit Requirements

BMP Number	BMP Description	Date Due	Date Completed	Updated
6-01	Written O&M Procedures	July 1, 2020		
6-01	Written Property Inventory	July 1, 2020		
6-02	Infrastructure O&M Procedures	July 1, 2020		
6-03	SWPPPs	July 1, 2020		
6-04	Catch Basin Cleaning Program	July 1, 2019	Documented in SWMP 6/28/2019	
6-05	Street Sweeping Procedures	July 1, 2019		
6-06	Winter Road Maintenance Program	July 1, 2019		
	Stormwater Treatment Structures Inspection and Maintenance Procedures	July 1, 2019	Not Applicable ¹	
	Employee Training	Annual		
	Site Inspections	Quarterly		

¹ The Town does not own any stormwater treatment structures

7.6.1 Inventory and Operations and Maintenance Procedures

BMP Number BMP 6-01

Description: Inventory all permittee-owned facilities and create written O&M procedures for municipal activities at these facilities. Facility categories include the following:

- Parks and open spaces,
 - Continue regular testing of local beaches for enterococci
 - Formalize O&M for Bear Pond ditch maintenance program, including develop, implement, and track maintenance
- Buildings and facilities,
 - Complete Spill Response Plan (SRP) for Flash Road Facility including training and annual review
- Vehicles and equipment
 - Develop Vehicle & Equipment Maintenance Program and incorporate into employee training manual
 - Develop Vehicle & Equipment Cleaning Policy and incorporate into employee training manual



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

Responsible Department/Parties: DPW Operations

Measurable Goals: Inventory and written document completed and implemented within 2 years after effective permit date.

7.6.2 Infrastructure Operations and Maintenance Procedures

BMP Number BMP 6-02

Description: Establish and implement program for repair and rehabilitation of MS4 infrastructure.

Responsible Department/Parties: Engineering

Measurable Goals: Complete 2 years after effective date of permit.

7.6.3 Stormwater Pollution Prevention Plan (SWPPP)

BMP Number BMP 6-03

BMP Description: Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities.

Measurable Goal: Complete and implement two (2) years after effective date of permit.

7.6.4 Catch Basin Cleaning Program

BMP Number BMP 6-04

BMP Description: Continue annual catch basin cleaning contract; and establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule.

Measurable Goal: Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually. *The Town hires a Contractor to clean catch basins every other year. Individual catch basins are cleaned as needed by the Town Department of Public Works.*

7.6.5 Street Sweeping Program

BMP Number BMP 6-05

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

Measurable Goal: Sweep all streets and permittee-owned parking lots once per year in the spring. *The Town hires a Contractor to sweep streets once per month, or more if needed based on large rain events.*

7.6.6 Winter Road Maintenance Program

BMP Number BMP 6-06



STORMWATER MANAGEMENT PROGRAM (SWMP)

Minimum Control Measures (MCM)

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

Measurable Goal: Implement salt use optimization during deicing season. *The Town utilizes salt spreaders, which have ground speed controls that reduce the amount of salt relative to the speed of the vehicle (EZ Spread).*

7.6.7 Stormwater Treatment Structures Inspection and Maintenance Procedures

BMP Number BMP 6-07

BMP Description: Establish and implement inspection and maintenance procedures and frequencies.

Measurable Goal: Inspect and maintain treatment structures at least annually.

7.6.8 Additional BMPs

The Town will implement the following additional Good Housekeeping and Pollution Prevention BMPs:

- Develop formal training for DPW staff on spill containment equipment and water deployment
- Develop Policy to formalize the Town's landscape and lawn care policy
- Apply for funding from a Coastal Zone Management (CZM) Grant to conduct remediation activities in Thicket Watershed.



STORMWATER MANAGEMENT PROGRAM (SWMP)

Annual Evaluation

8.0 ANNUAL EVALUATION

8.1 YEAR 1 ANNUAL REPORT

Report Due Date: September 29, 2019

Document Name and/or Web Address:

8.2 YEAR 2 ANNUAL REPORT

Report Due Date: September 29, 2020

Document Name and/or Web Address: [Year 2 Annual Report Massachusetts Small MS4 General Permit New Permittees for Nahant, MA \(epa.gov\)](#)

8.3 YEAR 3 ANNUAL REPORT

Report Due Date: September 28, 2021

Document Name and/or Web Address:

8.4 YEAR 4 ANNUAL REPORT

Report Due Date: September 29, 2022

Document Name and/or Web Address:

8.5 YEAR 5 ANNUAL REPORT

Report Due Date: September 29, 2023

Document Name and/or Web Address:



STORMWATER MANAGEMENT PROGRAM (SWMP)

TMDLs and Water Quality Limited Waters

9.0 TMDLS AND WATER QUALITY LIMITED WATERS

Table 9 summarizes TMDLs applicable to the Town of Nahant.

Table 9: Approved TMDLs: Bacteria/Pathogens

Applicable Receiving Waterbodies	TMDL Name
Lynn Harbor (MA93-52)	Fecal Coliform 50122
Lynn Harbor (MA93-53)	Fecal Coliform 50122
Nahant Bay (MA93-24)	Fecal Coliform 50121

9.1 ANNUAL REQUIREMENTS BEGINNING YEAR 1

The following annual requirements will be implemented beginning in Year 1:

- MCM3: The outfalls discharging to these receiving waters are ranked as high priority for IDDE implementation in the initial outfall ranking (BMP 3-03)
- MCM1: Provide an annual message to residents encouraging the proper management of pet waste, including noting any existing ordinances where appropriate. This will be handled by BMP 1-03 and by disseminating educational material to dog owners at the time of issuance or renewal of dog licenses. Education materials will describe the detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance (BMP 1-07). Refer to Town of Nahant Police By-Laws Section 13. Control of Dogs (http://www.nahant.org/departments/dog_officer.shtml).
- MCM1: Provide information to owners of septic systems about proper maintenance in any catchment that discharges to Lynn Harbor and Nahant Bay. The last known septic system in Town was filled in during Permit Year 2 (2019). Therefore, Public Education and Outreach related to septic systems is no longer applicable.



10.0 REFERENCES

United States Environmental Protection Agency (EPA). 2016. *Massachusetts Small MS4 General Permit*. <https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>. Accessed June 2019.

United States Environmental Protection Agency (EPA). 2003. *General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems*. https://www3.epa.gov/region1/npdes/permits/permit_final_ms4.pdf Accessed June 2019.

Commonwealth of Massachusetts. 2016. *Massachusetts Year 2016 Integrated List of Waters*. <https://www.mass.gov/doc/final-massachusetts-year-2016-integrated-list-of-waters/download>. Accessed September 2021.

Massachusetts Stormwater Management Plan Template v1.2. United States Environmental Protection Agency, Accessed June 2019.

Massachusetts Department of Environmental Protection. February 2008. *Massachusetts Stormwater Handbook*. <https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards>. Accessed June 2019.



APPENDIX A

Letter Approving Authorized Representative



Nahant Town Hall
334 Nahant Road
Nahant, MA 01908
Tel. (781) 581-9927 Fax (781)593-0340

June 28, 2019

Antonio Barletta
Town Administrator
334 Nahant Road
Nahant, MA 01908

Dear Mr. Barletta,

Please accept this letter as authority to sign reports pertaining to the Town of Nahant's Storm water Management Plan.

This authorization will remain in place as long as you hold the position as Town Administrator for the Town of Nahant.

Thank You,
Nahant Board of Selectmen


Richard J. Lombard, Chairman

Francis J. Barile, Vice Chairman


Joshua A. Antrim, Recording Secretary

APPENDIX B

Notice of Intent (October 2018)

Requested Additional Information (April 2019)

From: Antonio Barletta
To: stormwater.reports@epa.gov
Cc: [Bartlett, Mark](#); [Victoria Masone](#)
Subject: 2012 Small MS4 NOI
Date: Tuesday, October 02, 2018 8:42:27 AM
Attachments: [NAHANT appendix-e-2016-ma-sm4-gp.pdf](#)
[Nahant supplement to MS4 Notice of Intent.pdf](#)

Hello,

Please see the attached documents regarding Nahant, MA NOI.

Thank you,

Tony

Antonio Barletta

Town Administrator

[Nahant Town Hall](#)

334 Nahant Road

Nahant, MA 01908

Office: 781-581-0088

Mobile: 781-299-9682

Part I: General Conditions

General Information

Name of Municipality or Organization: State:

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Fax Number:

Other Information

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

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Eligibility Criteria (check all that apply): ☐ A ☐ B ☒ C

National Historic Preservation Act (NHPA) Determination Complete? Eligibility Criteria (check all that apply): ☒ A ☐ B ☐ C

☒ Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

MS4 Infrastructure (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete? If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY):

Web address where MS4 map is published:

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

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? (Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="10/01/2013"/>
Construction/Erosion and Sediment Control (ESC) Authority Adopted? (Part II, III, IV or V, Subpart B.4.(a.) of 2003 permit)	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="04/01/2015"/>
Post- Construction Stormwater Management Adopted? (Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="04/01/2015"/>

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

Part II: Summary of Receiving Waters

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

Massachusetts list of impaired waters: [Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf](http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf)

Waterbody that receives flow from the MS4 and segment ID if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Lynn Harbor	9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fecal Coliform TMDL 50122
Nahant Bay	15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fecal Coliform TMDL 50121
Massachusetts Bay	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Nahant Harbor	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Broad Sound	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Tributary to Lowlands Marsh	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Tributary to Kelly Green Marsh	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Wetland tributary to Thicket	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Wetland tributary to Nahant Harbor	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
Kelly Green Marsh	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none
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Click to lengthen table

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

Part III: Stormwater Management Program Summary

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

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

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	BMP Description	Targeted Audience	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal	Beginning Year of BMP Implementation
Web Page	stormwater educational information	Residents	Town Administrator and webmaster	post stormwater info to inform the public	2017
Web Page	hazardous waste pollution prevention	Residents	Town Administrator and webmaster	hazardous waste collection program	2017
Web Page and town hall posting	pet waste stations pick up & disposal of pet waste	Residents	Animal Control/Town Clerk /DPW	reduce pet waste as pollution source to wetlands/waterways	2017
Web page and flyer postings	General pollution prevention	Businesses, Institutions and Commercial Facilities	Town Administrator and webmaster	General pollution Prevention	2017
Newspaper Articles/Press Releases and post	water conservation measures	Residents	Board of Selectmen/DPW	leak detection and water efficiency	2017
Web Page/Video	posting of EPA video "After the Storm"	residents	Town Administrator and webmaster	pollution prevention and source reduction	2017
Annual letter	offer assistance with local cleanup activities	residents/beach associations/civic groups	DPW and Conservation Commission	provide tools/equipment for organized clean ups	2017

[illegible]

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

Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

[illegible]

[illegible]

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

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
SSO Inventory	Develop SSO inventory in accordance of permit conditions	Town Administrator/Town Clerk/Planning Board and DPW	Complete within 1 year of effective date of permit	2018
Storm Sewer Map	Create map and update during IDDE program completion	Town Administrator/Town Clerk/Planning Board and DPW	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018
Written IDDE program- NOTE: incorporated into the current town bylaw	Create written IDDE program	Engineering	Complete within 1 year of the effective date of permit and update as required	2018
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Engineering	Complete 10 years after effective date of permit	2019
Employee training	Train employees on IDDE implementation	Engineering	Train annually	2019
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Engineering	Complete 3 years after effective date of permit	2019
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Engineering	Complete 10 years after effective date of permit	2019
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Engineering	Complete ongoing outfall screening upon completion of IDDE program	2020

[illegible]

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

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

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Conservation Commission	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Planning Board and Conservation Commission	Complete within 1 year of the effective date of permit	2018
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Conservation Commission	Complete within 1 year of the effective date of permit	2018
Waste Control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Conservation Commission	Complete within 1 year of the effective date of permit	2018

[illegible]

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

Part III: Stormwater Management Program Summary (continued)

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

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Planning Board and Conservation Commission	Require submission of as-built plans for completed projects	2017
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Planning Board	Complete 4 years after effective date of permit and report annually on retrofitted properties	2020
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Planning Board and Conservation Commission	Complete 4 years after effective date of permit and implement recommendations of report	2020
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	Planning Board	Complete 4 years after effective date of permit and implement recommendations of report	2020

[illegible]

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

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
O&M procedures for landscape/lawn care	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	DPW Operations	Complete and implement 2 years after effective date of permit	2018
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	Engineering	Complete 2 years after effective date of permit and implement annually	2018
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	Engineering	Complete 2 years after effective date of permit	2018
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	Engineering	Complete and implement 2 years after effective date of permit	2018
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	DPW Operations	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2017
Street sweeping program	Sweep all streets and permittee-owned parking lots in accordance with permit conditions	DPW Operations	Sweep all streets and permittee-owned parking lots once per year in the spring	2017
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	DPW Operations	Implement salt use optimization during deicing season	2017

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	DPW Operations	Inspect and maintain treatment structures at least annually	2017
O&M Program (Public BMP Maintenance)	Develop Vehicle & Equipment Maintenance Program	DPW Operations	incorporate into employee training manual	2017
O&M Program (Vehicle Washing)	Develop vehicle & equipment Cleaning Policy	DPW Operations	incorporate into employee training manual	2017
O&M Program (General)	develop formal training for DPW staff	DPW/Fire Department	training on spill containment equipment and water deployment	2017
Landscaping/Lawn Care	Develop Policy	Golf Course Committee	formalize town's landscape and lawn care policy	2005
Spill Response Plan for Town Facility	complete SPR for Flash Road Facility	DPW Operations	SPR training/annual review	2005
Pollution Remediation	apply for funding to conduct remediation activities in Thicket Watershed	Town Administrator/Audubon	apply to CZM	TBD
O&M Program (General)	formalize O&M for Bear Pond ditch maint. program	DPW Operations	develop, implement & track maintenance	TBD
Water Monitoring/Testing	continue regular testing of local Beaches for enterococci	Board of Health	continue testing	annual

Part III: Stormwater Management Program Summary (continued)

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

[illegible]

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

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. In addition, if you are subject to additional requirements due to a downstream nutrient impairment (see Part 2.2.2 of the permit) select the pollutant of concern and indicate applicable waterbody IDs or write "all waterbodies" if applicable. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

[illegible]

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1 and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary. Also, provide any additional information about your MS4 program below.

Based on the 2014 Massachusetts Year 2014 Integrated List of Waters, there are no receiving waters listed as impaired due to nitrogen or phosphorous mapped within Nahant.

Part V: Certification

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

Name:

Antonio Barletta

Title:

Town Administrator

Signature:

Antonio Barletta

Digitally signed by Antonio Barletta
DN: cn=Antonio Barletta, o=Town of Nahant, ou=Town
Administrator, email=abarletta@nahant.org, c=US
Date: 2018.10.02 08:26:38 -0400

Date:

09/28/18

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

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

ADDENDA TO 2018 NOTICE OF INTENT (NOI) FOR TOWN OF NAHANT

EPA NPDES SMALL MS4 PERMIT MA041051

Stantec prepared the MS4 Notice of Intent on behalf of the Town of Nahant relying on the following information:

- NPDES PII Small General Permit Annual Report for the reporting period between April 1, 2017 and March 31, 2018; and
- “Stormwater Management Plan” Town of Nahant, Massachusetts Final dated November 2003.

Part I: General Conditions

Eligibility Determinations

The NOI requires Permit Eligibility Documentation for the Endangered Species Act and National Historic Preservation Act (NHPA).

For this part, the following were reviewed to determine the presence or absence of federally endangered species and habitat that may occur within the action area (points of discharge): The U.S. Fish and Wildlife Service’s IPaC process, the U.S. Fish and Wildlife Service New England Field Office Self Service Consultation process and the U.S. Fish Federal Critical Habitat portal. The IPaC results show the Roseate Tern (Endangered “E”), Northern long-eared bat (Threatened “T”), Piping Plover (T) and Red Knot (T) and a number of migratory bird species. The New England Field office consultation process for Essex County shows the Red Knot in all coastal towns, NLEB as statewide; the Piping Plover is not included as a threatened and/or endangered species within Nahant and the Roseate Tern is not included on the list as a federally endangered or threatened species. According to the Critical Habitat portal, there is no mapped critical federal habitat within the action area. According to the EPA’s Stormwater Management FAQ document dated September 14, 2018, if the municipality contains the NLEB, compliance with Criterion C can be determined. In sum, the Red Knot is the threatened species that could potentially occur within the action area, however the U.S.FWS notes that the Red knot is found along coastal beaches, rocky shores and sand and mud flats and is considered “migratory only, scattered along the coast in small numbers.” The continued existence and operation of storm drain outfalls, as opposed to new construction, will not result in a take of federally listed Red Knot.

As far as NHPA, the above reference EPA FAQ states that if there is no MS4 work proposed, including construction that would affect historic properties, then compliance with NHPA meets Criterion A in the Permit Eligibility Section.

Illicit Discharge Detection and Elimination (IDDE) Authority

After reviewing the current Town of Nahant bylaws during Permit Year 3, the Town decided not to develop an Illicit Discharge Detection and Elimination Plan because the current bylaws adequately protect the stormwater drainage system. The DPW will continue to conduct formal dry-weather screening of outfalls and track potential illicit connections.

Small MS4 NOI Information Requested - Town of Nahant

To: Antonio Barletta abarletta@nahant.org
MS4 Operator: Town of Nahant
NPDES ID: MAR041051

Please provide corrected or additional information for the following:

Note: you do not need to resubmit your entire NOI form; please respond to the email you received from the EPA review team member as soon as possible, but within 30 days, with the requested information below.

2003 Information: The map could not be located at the link provided. Please provide a new link or attach a PDF of the map.

ESA eligibility: Based on the summarized IPaC results, the town should designate criterion B. Please attach correspondence with USFWS. This correspondence can be found at <https://www.epa.gov/npdes-permits/small-ms4-noi-resources-list-ma-nh>.

NHPA eligibility:

Receiving waters:

Public Education MCM: Please describe 2 messages to each of 4 audiences as required by the permit or indicate that one or more audiences are not present in your municipality (missing 1 for businesses, institutions, and commercial facilities; 2 for developers (construction); and 2 for industrial facilities)

Public Participation MCM:

IDDE MCM:

Construction MCM:

Post-construction MCM:

Good Housekeeping MCM:

TMDLs: Please confirm that the town will follow the North Coastal Pathogen TMDL for Lynn Harbor and Nahant Bay.

Impairments: Note: the requirements in part A.III of Appendix F should be followed for the fecal coliform impairments since there is a TMDL for the applicable waterbodies (instead of following part III of Appendix H).

Certification Information:



Town of Nahant
334 Nahant Road
Nahant, MA 01908

Telephone: 781-581-0088 Fax: 781-593-0340

April 16, 2019

Michelle Vuto
Stormwater & Construction Permits
U.S. EPA Region 1
5 Post Office Square—OEP06-4
Boston, MA 02109-3912
Sent via email to: Vuto.Michelle@epa.gov

Dear Ms. Vuto,

Attached please find a memorandum from the Town of Nahant's MS4 consultant, Stantec, summarizing the Town's response to EPA's March 11, 2019 request for additional information on the Town's MS4 NOI.

Please do not hesitate to contact me directly at abarletta@nahant.org with any additional questions on this matter.

Sincerely,

Antonio Barletta
Town Administrator
Town of Nahant

To:	Antonio Barletta Town Administrator Town of Nahant	From:	Jennifer Zoppo Stantec 226 Causeway Street, 6th Floor Boston, MA 02114
File:	Small MS4 NOI Information Requested	Date:	April 16, 2019

Reference: Small MS4 NOI Information Requested

The intent of this memorandum is to provide a response to EPA's request for information dated March 11, 2019.

1. 2003 Information: The map could not be located at the link provided. Please provide a new link or attach a PDF of the map.

A pdf copy of the map is attached.

2. ESA eligibility: Based on the summarized IPaC results, the town should designate criterion B. Please attach correspondence with USFWS. This correspondence can be found at <https://www.epa.gov/npdes-permits/small-ms4-noi-resources-list-ma-nh>

The Town agrees Criterion B is appropriate. In order to meet the documentation requirements for Criterion B, we have attached a copy of the IPaC Official Species List and the USFWS consultation letter dated September 28, 2018 for certifying under eligibility Criterion B. The letter states that Permit activities may affect, but are not likely to adversely affect, certain species when specific conditions are met. The Town has reviewed the specific conditions and confirms they are met.

3. Public Education MCM: Please describe 2 messages to each of 4 audiences as required by the permit or indicate that one or more audiences are not present in your municipality (missing 1 for businesses, institutions, and commercial facilities; 2 for developers (construction); and 2 for industrial facilities)

The Town will employ the following BMPs for target audiences, in addition to those already listed in the NOI:

- *Businesses, Institutions, and Commercial Facilities:*
 - *Brochures/Pamphlets; The Town Administrator will be the responsible party to coordinate with Nahant SWIM on the 2019 rack card, ensuring it is sent to all businesses*
- *Developers (Construction):*
 - *Brochures/Pamphlets; The Town Administrator will be the responsible party to distribute the Builder's Guide to LID (brochure) developed by DEP (<https://www.mass.gov/doc/builders-guide-to-low-impact-development-lid>) or similar; 2019*
 - *Brochures/Pamphlets; The Town Administrator will be the responsible party to distribute the US EPA Stormwater Pollution Prevention for Small Residential Construction Sites brochure (https://www.epa.gov/sites/production/files/2015-12/documents/cgp_small_lot_swppp_brochure-508_0.pdf) or similar; 2020*

Reference: Small MS4 NOI Information Requested

- *Industrial Facilities: The Town of Nahant does not contain any areas zoned for industrial use, therefore, the Industrial Facilities target audience is not applicable.*
4. TMDLs: Please confirm that the town will follow the North Coastal Pathogen TMDL for Lynn Harbor and Nahant Bay
- The Town will follow the Final Pathogen TMDL for the North Coastal Watershed dated March 2012, with respect to Lynn Harbor (MA93-52 and MA93-53) and Nahant Bay (MA93-24).*
5. Impairments: Note: the requirements in part A.III of Appendix F should be followed for the fecal coliform impairments since there is a TMDL for the applicable waterbodies (instead of following part III of Appendix H).
- The Town confirms Part A.III of Appendix F will be followed for fecal coliform impairments. The mention of Appendix H was a transcription error.*

Stantec Consulting Services

Jen Zoppo PMP
Project Manager

Phone: 1 617 314 7172
jennifer.zoppo@stantec.com

Attachment: MS4 Outfall Map
IPaC Official Species List
USFWS Consultation Letter

- c. Victoria Masone/VM Consulting Engineers, LLC
Mark Bartlett/Stantec



Figure 2
Outfall Location Map

July 2003

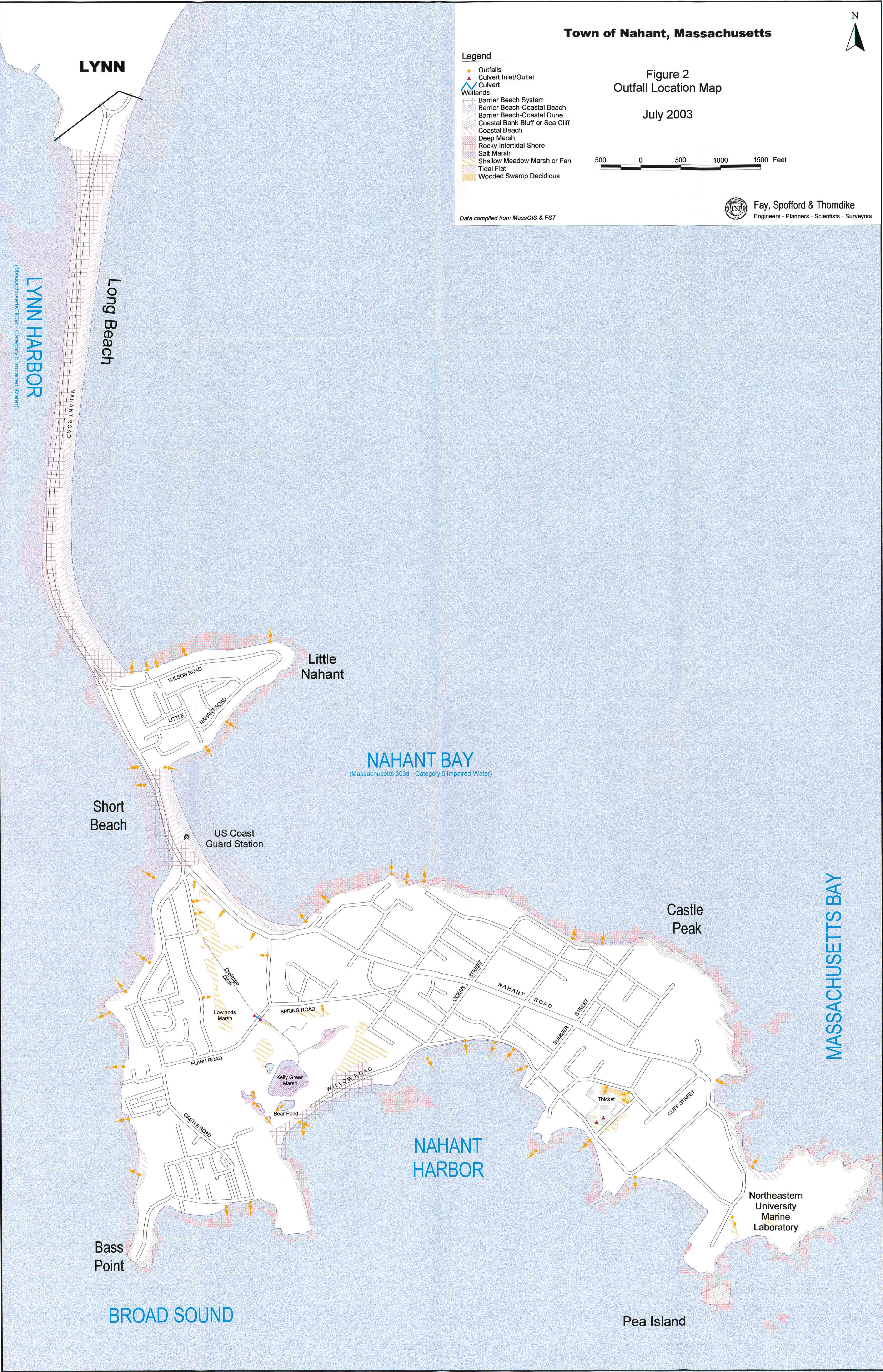
- Legend**
- Outfalls
 - ▲ Culvert Inlet/Outlet
 - ▲ Culvert
 - Wetlands
 - Barrier Beach System
 - Barrier Beach-Coastal Beach
 - Barrier Beach-Coastal Dune
 - Coastal Bank Bluff or Sea Cliff
 - Coastal Beach
 - Deep Marsh
 - Rocky Intertidal Shore
 - Salt Marsh
 - Shallow Meadow Marsh or Fen
 - Tidal Flat
 - Wooded Swamp Deciduous

500 0 500 1000 1500 Feet



Fay, Spofford & Thorndike
Engineers - Planners - Scientists - Surveyors

Data compiled from MassGIS & FST





United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-1405
Event Code: 05E1NE00-2019-E-03339
Project Name: Nahant, MA

April 12, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-1405

Event Code: 05E1NE00-2019-E-03339

Project Name: Nahant, MA

Project Type: ** OTHER **

Project Description: Town of Nahant MS4 Permit, Effective date of Permit July 1, 2018.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.43650565553672N70.93388303802077W>



Counties: Essex, MA

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

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

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern <i>Sterna dougallii dougallii</i> Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Critical habitats

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



United States Department of the Interior



FISH AND WILDLIFE SERVICE

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

September 24, 2018

To whom it may concern:

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

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

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

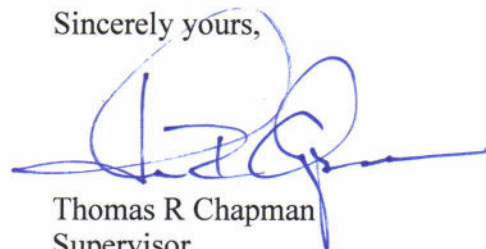
species listed under **Criterion C**,¹ you may still use this letter to certify under **Criterion B**. All existing guidance regarding requirements for certifying eligibility according to the USFWS Criterion A, B, or C for coverage by the 2016 MS4 Permit (see MA MS4 General Permit Appendix C – Endangered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

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

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

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

Sincerely yours,



Thomas R Chapman
Supervisor
New England Field Office

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

APPENDIX C

Authorization to Discharge



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

VIA EMAIL

June 4, 2019

Antonio Barletta
Town Administrator

And;

Antonio Barletta
Town Administrator
Nahant Town Hall
334 Nahant Road
Nahant, MA. 01908
abarletta@nahant.org

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041051, Town of Nahant

Dear Antonio Barletta:

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

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

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

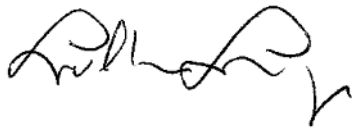
Information about the permit and available resources can be found on our website:
<https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>. Should you have any questions regarding this permit please contact Newton Tedder at tedder.newton@epa.gov or (617) 918-1038.

Sincerely,



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

and;



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

APPENDIX D

Town of Nahant Stormwater By-Laws

Storm Water By law Article XVI

GENERAL BYLAW

Town of Nahant

SECTION I. PURPOSE

Regulation of activities that result in the disturbance of land and the creation of storm water runoff is necessary for the protection of the Town of Nahant to safeguard the health, safety, and welfare of the general public and protect the natural resources of the Town of Nahant, including the water bodies and groundwater. The purpose of this Bylaw is to prevent or diminish these impacts by controlling runoff and preventing soil erosion and sedimentation resulting from site construction and development.

A. The harmful impacts of soil erosion and sedimentation are:

- 1 Impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater:
2. Contamination of drinking water supplies:
3. Alteration or destruction of aquatic and wildlife habitat;
4. Flooding; and
5. Overloading or clogging of municipal catch basins and storm drainage systems.

The objectives of this by-law are:

1. To require practices that eliminate soil erosion and sedimentation and control the volume and rate of storm water runoff resulting from land disturbance activities;
2. To ensure that soil erosion and sedimentation control measures and storm water runoff control practices are incorporated into the site planning and design process and are implemented and maintained;
3. To require practices to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
4. To require practices to control the flow of storm water from new and redeveloped sites into the Town of Nahant storm drainage system in order to prevent flooding and erosion;
5. To protect ground water and surface water from degradation;
6. To promote groundwater recharge;
7. To prevent pollutants from entering the Town of Nahant municipal separate storm sewer system (MS4) and to minimize discharge of pollutants from the MS4;

8. to ensure adequate long-term operation and maintenance of structural storm water best management practices so that they work as designed;
9. to comply with state and federal statutes and regulations relating to storm water discharges; and
10. To establish the Town of Nahant legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement;
11. To establish decision-making processes surrounding the land development activities that protect the integrity of the watershed and preserve the health of wetland and water resources;
12. to require that new development, redevelopment and all land conversion activities maintain the after-development runoff characteristics equal to or less than predevelopment runoff characteristics to provide recharge and to reduce flooding, stream bank erosion, siltation, nonpoint source pollution, property damage, and to maintain the integrity of stream, channels and aquatic habitats;
- I 3. To establish construction/alteration and post-development storm water management standards and design criteria for the regulation and control of storm water runoff quality and quantity
- I 4. To establish design criteria for measures to minimize nonpoint source pollution from storm water runoff which would otherwise degrade water quality;
- I 5. To establish design and application criteria for the construction and to use of structural storm water control facilities that can be used to meet minimum construction/alteration and post-development storm water management, storm water site design practices or "low- impact development" practices, such as reducing impervious cover and the preservation of open space and other natural areas, to the maximum extent practicable;
16. To establish provisions for the long-term responsibility for and maintenance of structural storm water control facilities and nonstructural storm water management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;
17. To establish provisions to ensure that there is an adequate funding mechanism, including surety, for the proper review, inspection, and long-term maintenance of storm water facilities implemented as part of this Bylaw; and
18. To establish administrative procedures and fees for the submission, review, approval, or disapproval of storm water management plans, and for the inspection of approved active projects and long-term follow-ups.

SECTION 2. DEFINITIONS

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

AGRICULTURE: The normal maintenance or improvement of land agricultural or aqua cultural use, as defined by the Massachusetts Wetlands Protection Act G.L. c. 131, § 40, and its implementing regulations.

APPLICANT: Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision of the Commonwealth or the Federal government to the extent permitted by law requesting a soil erosion and sediment control permit for proposed land-disturbance activity.

AUTHORIZED ENFORCEMENT AGENCY: The Planning Board its employees or agents designated to enforce this by-law.

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

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

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

CLEARING: Any activity that removes the vegetative surface cover.

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

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

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

ESTIMATED HABITAT OF RARE WILDLIFE AND CERTIFIED VERNAL POOLS. Habitats Delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

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

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

IMPERVIOUS SURFACE: Any material or structure on or above the ground that prevents water in filtering the underlying soil. Impervious surface includes without limitation roads, paved parking lots, sidewalks, and roof tops.

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

MASSACHUSETTS ENDANGERED SPECIES ACT: (G.L. c. 131A) and its implementing regulations at (321 CMR 10.00) which prohibit the "taking" of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

MASSACHUSETTS STORM WATER MANAGEMENT POLICY. The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L.

c. 131 §. 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses storm water impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

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

OPERATION AND MAINTENANCE PLAN: A plan setting up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a storm water management system to insure that it continues to function as designed.

OUTFALL: The point at which storm water flows out from a point source discernable, confined and discrete conveyance into waters of the Commonwealth.

OUTSTANDING RESOURCE WATERS (ORWs): Waters designated by Massachusetts Department of Environmental Protection as ORWs. These waters have exceptional sociologic, recreational, ecological and/or aesthetic values and are subject to more stringent requirements under both the Massachusetts Water Quality Standards (314 CMR 4.00) and the Massachusetts Storm water Management Standards. ORWs include vernal pools certified by the Natural Heritage Program of the Massachusetts Department of Fisheries and Wildlife and Environmental Law Enforcement, all Class A designated public water supplies with their bordering vegetated wetlands, and other waters specifically designated.

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

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

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

PRE-CONSTRUCTION: All activity in preparation for construction.

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

REDEVELOPMENT: Development, rehabilitation, expansion, demolition or phased projects that disturb the ground surface or increase the impervious area on previously developed sites.

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

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

SEDIMENTATION: The process or act of deposition of sediment.

SITE: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

SLOPE: The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance.

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

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

STORMWATER: Storm water runoff, snow melt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan required as part of the application for a Storm water Management Permit. Sec Section 7. A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbance activities.

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

TSS: Total Suspended Solids.

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

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

WETLAND RESOURCE AREA. Areas specified in the Massachusetts Wetlands Protection Act G.L. c. 131, § 40 and in the Town of Nahant wetland bylaw/ordinance.

SECTION 3. AUTHORITY

This bylaw is adopted under authority granted by the Home Rule Amendment of the Massachusetts Constitution, the Home Rule statutes, and pursuant to the regulations of the federal Clean Water Act found at 40 CFR 122.34

Nothing in this Bylaw is intended to replace the requirements of any other bylaw that has been made or may be adopted by the Town of Nahant.

SECTION 4. APPLICABILITY

This bylaw shall apply to all activities that result in disturbance of one or more acres of land that drains to the municipal separate storm sewer system. Except as authorized by the Planning Board in a Storm water Management Permit or as otherwise provided in this bylaw, no person shall perform any activity that results in disturbance of an acre or more of land. Normal maintenance and improvement of land in

Agricultural or aqua cultural use, as defined by the Wetlands Protection Act regulation 310 CMR 10.4, are exempt. In addition, as authorized in the Phase II Small MS4 General Permit for Massachusetts, storm water discharges resulting from the above activities that are subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Storm Water Management Policy as reflected in an Order of conditions issued by the Conservation Commission are exempt from compliance with this bylaw.

No person may undertake a construction activity, including clearing, grading and excavation that results in a land disturbance that will disturb equal to or greater than one acre of land or will disturb less than one acre of land but part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one acre of land draining in to the Town of Nahant municipal storm sewer system without a permit from the Planning Board. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity or the original purpose of the site.

Construction activities that are exempt are:

1. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulations 310 CMR 10.04 and MGL Chapter 40A, section 3;
2. Maintenance of existing landscaping gardens, or lawn areas associate with a single family dwelling provided such maintenance does not include the addition of more that 100 cubic yards of soil material, or alteration of drainage patterns;
3. The construction of fencing that will not substantially alter existing terrain or drainage patterns;
4. Normal maintenance of Town owned public land, ways, and appurtenances;
5. Maintenance, reconstruction or resurfacing of any public way; and the installation of drainage structures or utilities within or associated with public ways that have been approved by the appropriate authorities provided that written notice be filed with the Planning Board fourteen (14) days prior to commencement of activity;
6. Activities that are subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Storm Water Management Policy as reflected in an Order of Condition issued by the Conservation Commission.

SECTION 5. RESPONSIBILITY FOR ADMINISTRATION

- A. The Planning Board shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Planning Board may be delegated in writing by the Planning Board to its employees or agents.
- B. Waiver. The Planning Board may waive strict compliance with any requirement of this by-law or the rules and regulations promulgated hereunder, where:
 - (1) Such action is allowed by federal, state and local statutes and/or regulations,
 - (2) Is in the public interest, and
 - (3) Is not inconsistent with the purpose and intent of this by-law.

C. Public Hearing. The Permit Authority shall hold a public hearing within sixty five (65) days of the receipt of a complete application and shall take final action within ninety (90) days from the time of the close of the hearing unless such time is extended by agreement between the applicant and the Permit Authority. Notice of the public hearing shall be given by publication and posting and by certified mail at the applicants expense to abutters at least fourteen (14) days prior to the hearing. The Permit Authority shall make the application available for inspection by the public during business hours at the Nahant Town Hall.

D. Information requests. The applicant shall submit all additional information requested by the Permit Authority to issue a decision on the application.

E. Actions by the Permit Authority may include;

- 1.. Approve the Storm water Management Permit (Storm water Management Permit) Application and issue a permit if it finds that the proposed plan will protect water resources and meets the objectives and requirements of this by-law;

2. Approve the Storm water Management Permit application and issue a permit with conditions, modifications or restrictions that the Permit Authority determines are required to ensure that the project will protect water resources and meets the objectives and requirements of this by-law;

3. Disapprove the Storm water Management Permit Application and deny the permit if it finds that the proposed plan will not protect water resources or fails to meet the objectives and requirements of this by-law.

F. Failure of the Permit Authority to take final action. Failure of the Permit Authority to take final action upon an Application within the time specified above shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without the Permit Authority's action, the Storm water Management Permit shall be issued by the Town Clerk.

SECTION 6. RULES AND REGULATIONS

The Planning Board may adopt, and periodically amend rules and regulations to effectuate the purposes of this by-law. Failure by the Planning Board to promulgate such rules and regulations shall not have the effect of suspending or in this by-law. The Rules and Regulations shall include Permits and Procedure; Storm water Management Plan; Operation and Maintenance Plans, etc.

SECTION 7. SURETY

The Planning Board may require the permittee to post before the start of land disturbance activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by town counsel, and be in an amount deemed sufficient by the Planning Board to ensure that the work will be completed in accordance with the permit. If the project is phased, the Planning Board may release part of the bond as each phase is completed in compliance with the permit but the bond may not be fully released until the Planning Board has received the final report as required by Section I 0 and issued a certificate of completion.

SECTION 8. FINAL REPORTS

Upon completion of the work, the permittee shall submit a report (including certified as-built construction plans, as outlined in Subdivision Regulations, Section IV.B.8.a, from a Professional Engineer (P.E.), surveyor, or Certified Professional in Erosion and Sediment Control (CPESC), certifying that all erosion and sediment control devices, and approved changes and modification, have been completed in accordance with the conditions of the approved permit. Any discrepancies should be noted in the cover letter.

SECTION 9. ENFORCEMENT

A. The Planning Board or an authorized agent of the Planning Board shall enforce this by-law, regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

B. Orders

1. The Planning Board or an authorized agent of the Planning Board may issue a written order to enforce the provisions of this by-law or the regulations thereunder, which may include:

- (a) A requirement to cease and desist from the land-disturbing activity until there is compliance with the bylaw and provisions of the land-disturbance permit:
- (b) Maintenance, installation or performance of additional erosion and sediment control measures:
- (c) Monitoring, analyses, and reporting
- (d) Remediation of erosion and sedimentation resulting directly or indirectly from the land-disturbing activity.

2. If the enforcing person determines that abatement or remediation of erosion and sedimentation is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline the Town of Nahant. may, at its option, undertake such work, and the property owner shall reimburse the Town of Nahant expenses

9(B) (3) (Special Assessment)

3. Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner shall be notified of the costs incurred by the Town of Nahant, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Planning Board within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Planning Board affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the cost shall become a municipal charges lien against the property owner pursuant to G.L.Ch. 40§58 for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate, as provided in G.L. Ch. 59, § 57, after the thirty first day following the day on which the costs were due. **Rev. 3/6/2017 by Town Counsel and TA.**

- C. **Criminal Penalty.** Any person who violates any provision of this by-law, regulation, order or permit issued there under, shall be punished by a fine of not more than \$100.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.
- D. **Non-Criminal Penalty**
As an alternative to criminal prosecution or civil action, the Town of Nahant may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch.40,§ 21 D. and Article XIII (Non-Criminal Disposition of Violations) within the Police By-Laws of the Town of Nahant, in which case the Planning Board of the Town of Nahant shall be the enforcing person. The penalty for the 1st violation shall be \$25.00. The penalty for the 2nd violation shall be \$50.00. The penalty for the 3rd and subsequent violations shall be \$100.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense. **Rev. 3/6/2017 by Town Counsel and TA.**
- E. Appeals. The decisions or order of the Planning Board shall be final. Further relief shall be to a court of competent jurisdiction
- F. Remedies Not Exclusive. The remedies listed in this by-law are not exclusive of any other remedies available under any applicable federal, state or local law.

SECTION 10. CERTIFICATE OF COMPLETION

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

SECTION 11. SEVERABILITY

If any provision, paragraph, sentence, or clause of this by-Jaw shall be held invalid for any reason, all other provisions shall continue in full force and effect.

ATM 4/25/2015

Warrant Article 11. (General) approved *amendment* to the Town's bylaws.

AG amendment approval 8/31/2015 Case # 7562

This general bylaw shall be in full force and effect from and after its passage approval recording and publications, as provided by law.

Passed and adopted by Town Meeting of the Town of Nahant on the twenty fifth (25th) day of April, 2015 by a unanimous vote in favor.

Approved by the Attorney General of Massachusetts on August 31, 2015.

Witness my hand and the seal of the Town of Nahant.

Margaret R. Barile
Town Clerk

A true copy, attest:

APPENDIX E

Sanitary Sewer Overflow Inventory

Town of Nahant, MA
MCM 3 - ILLICIT DISCHARGE DETECTION & ELIMINATION
Sanitary Sewer Overflow (SSO) Inventory
Updated 9/22/2021

SSO Location	Discharge Statement	Date	Time Start	Time End	Estimated Volume	Description	Mitigation Completed	Mitigation Planned
435 Lynnway, Lynn, MA	Discharge from sanitary sewer manhole to ground surface and catch basin to Lynn Harbor	6/2/2021	8:15 AM	10:30 AM	19,125 Gal	Cleanout plug at sewer manhole corroded and released from flange. Flange and cleanout plug replaced.	Shut down pump stations, tanker trucks on line to truck sewage from pump stations to Lynn Treatment Plant. Remove corroded flange and plug, replace flange and plug, backfill, repave. Street swept and surface material removed.	Continue to monitor pump station and pipes. Complete assessment of current 18" pipe condition and survey has been completed. Our force main design engineer - Wright Pierce has completed design on the force main re-lining and are preparing bid documents.
330 Lynnway, Lynn, MA	Discharge from 18" ductile iron force main to catch basin to receiving water	9/29/2020	6:15 PM	7:30 PM	18,125 Gal	Pipe wall failure due to corrosion, two bell ends with a 2' stick of pipe between them with major corrosion all around pipe.	Shut down pump stations, tanker trucks on line to truck sewage from pump stations to Lynn Treatment Plant. Remove section of damaged pipe, replace pipe section, backfill, repave. Street swept and surface material removed.	Continue to monitor pump station and pipes. Assessment of current 18" pipe condition and survey has been completed. Our force main design engineer - Wright Pierce has begun design and permitting of the replacement of the Lynnway section of the force main pipe. Town borrowing in place as of 9-26-2020 for force main lining from the Rotary to the Lynn Treatment Plant.
260 Lynnway, Lynn, MA	Discharge from force main to ground surface and catch basin to Lynn Harbor	6/10/2020	6:45 PM	7:30 PM	18550 Gal	Pipe wall failure due to corrosion	Shut down pump stations, tanker trucks online to truck sewage from pump stations to Lynn Treatment Plant. Remove section of damaged pipe, replace pipe section, backfill, repave.	Continue to monitor pump stations and pipes. Complete assessment of current 18" pipe condition and survey has been completed. Our force main design engineer (Wright Pierce) has begun design and permitting of the replacement of the Lynnway section of the force main pipe.
260 Lynnway, Lynn, MA	Discharge from force main to ground surface and catch basin to Lynn Harbor	4/3/2019	8:45 AM	10:00 AM	19,389 Gal	Pipe wall failure due to corrosion	Shut down pump stations, tanker trucks online to truck sewage from pump stations to Lynn Treatment Plant. Remove section of damaged pipe, replace pipe section, backfill, repave.	Continue to monitor pump stations and pipes. Ongoing force main replacement alternative study.
330 Lynnway, Lynn, MA		4/25/2017	3:45 PM	6:45 PM	30,000 Gal	Linear break due to corrosion of pipe	Excavated roadway to locate break. Located break. Installed stainless steel three-section repair clamp. Backfilled roadway. Cleaned roadway.	None

APPENDIX F

IDDE Plan, Outfall Inventory and Ranking, and Phase I Map



Illicit Discharge Detection and Elimination (IDDE) Program

September 22, 2021

Prepared for:

Town of Nahant
334 Nahant Road
Nahant, MA 01908
EPA NPDES Permit Number:
MAR041051

Prepared by:

Stantec Consulting Services, Inc.



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Abbreviations

2016 ILW	Massachusetts 2016 Integrated List of Waters
CCTV	Closed-circuit television
CFR	Code of Federal Regulations
cfu	colony-forming unit
CMRSWC	Central Massachusetts Regional Stormwater Coalition
DCR	Department of Conservation and Recreation
DPW	Department of Public Works
GIS	geographic information system
GPS	Global Positioning System
IDDE	Illicit Discharge Detection and Elimination
LOS	Level of Service
LWSC	Lynn Water and Sewer Commission
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
mg/L	Milligrams per liter
mL	Milliliter
MPN	Most probable number
MS4	Municipal Separate Storm Sewer System
MUTCD	Manual on Uniform Traffic Control Devices
NPDES	National Pollutant Discharge Elimination System
NWS	National Weather Service
PPE	Personal Protective Equipment
SM	Standard Method
SSO	Sanitary Sewer Overflow



SVF	System Vulnerability Factors
SWMP	Stormwater Management Program
SWIM	Safer Waters in Massachusetts
TMDL	Total Maximum Daily Load
USEPA / EPA	United States Environmental Protection Agency
μS/cm	Micro Siemens per Centimeter



ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Introduction

Glossary

Catchment	Area that drains to an individual outfall or interconnection
Dry Weather	No more than 0.1 inches of rainfall has occurred in the previous 24-hour period, and no significant snow melt is occurring
Illicit connection	Any connection to the MS4, or, directly or indirectly, to a watercourse or waters of the United States, that is not authorized and is causing or contributing to an illicit discharge
Illicit discharge	Any discharge to a drainage system that is not composed entirely of stormwater, with the exception of discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities
Impaired waters	Water bodies that do not meet water quality standards for one or more designated use(s) such as recreation or aquatic habitat
Interconnection	The point (excluding sheet flow over impervious surfaces) where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the United States or to another storm sewer system and eventually to a water of the United States
Outfall	A point source as defined by 40 CFR § 122.2 as the point where the municipal separate storm sewer discharges to waters of the United States. An outfall does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels or other conveyances that connect segments of the same stream or other waters of the United States, and that are used to convey waters of the United States.
Junction Manhole	A manhole or structure with two or more inlets accepting flow from two or more MS4 alignments



ILLCIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Introduction

Key Junction Manhole	Junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program
Sump Manhole	Manholes with a significant difference in elevation between the bottom of the structure to the bottom of the outlet pipe
SSO	SSOs are discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause serious water quality problems and property damage, and threaten public health.
Wet Weather	A storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall



1.0 INTRODUCTION

1.1 MS4 PROGRAM

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed by the Town of Nahant (Town) to address the requirements of the United States Environmental Protection Agency's (USEPA's) 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, hereinafter referred to as the "2016 Massachusetts MS4 Permit", the "MS4 Permit", or the "Permit."

The 2016 Massachusetts MS4 Permit requires that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

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

Under Minimum Control Measure 3, the permittee is required to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. The IDDE program must also be recorded in a written (hardcopy or electronic) document. This IDDE Plan has been prepared to address this requirement. This Plan has adapted procedures from guidance documents from the Central Massachusetts Regional Stormwater Coalition (CMRSWC), the Center for Watershed Protection, the New England Interstate Water Pollution Control Commission, and the U.S. EPA.

1.2 ILLICIT DISCHARGES

An "illicit discharge" is any discharge to a drainage system that is not composed entirely of stormwater, with the exception of discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4), and discharges resulting from fire-fighting activities.

Illicit discharges may take a variety of forms. Illicit discharges may enter the drainage system through direct or indirect connections. Direct connections may be relatively obvious, such as cross-connections of sewer services to the storm drain system. Indirect illicit discharges may be more difficult to detect or



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address, such as a sump pump that discharges contaminated water to a storm drain system on an intermittent basis.

Some illicit discharges are intentional, such as dumping used oil (or other pollutant) into catch basins, a resident or contractor illegally tapping a new sewer lateral into a storm drain pipe to avoid the costs of a sewer connection fee and service, and illegal dumping of yard wastes into surface waters.

Some illicit discharges are related to the unsuitability of original infrastructure to the modern regulatory environment. Examples of illicit discharges in this category include connected floor drains in old buildings, as well as sanitary sewer overflows (SSOs) that enter the drainage system. Sump pumps legally connected to the storm drain system may be used inappropriately, such as for the disposal of floor washwater or old household products. In many cases such inappropriate use is due to a lack of understanding on the part of the homeowner.

Elimination of some discharges may require substantial costs and efforts, such as funding and designing a project to reconnect sanitary sewer laterals. Others, such as improving self-policing of dog waste management, can be accomplished by outreach in conjunction with the installation of dog waste bins.

Regardless of the intention, when not addressed, illicit discharges can contribute high levels of pollutants, such as heavy metals, toxics, oil, grease, solvents, nutrients, and pathogens to surface waters.

1.3 ALLOWABLE STORMWATER DISCHARGES

The following categories of non-storm water discharges are allowed under the MS4 Permit unless the permittee, USEPA, or Massachusetts Department of Environmental Protection (MassDEP) identifies any category or individual discharge of non-stormwater discharge as a significant contributor of pollutants to the MS4.

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising groundwater
- Uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20))
- Uncontaminated pumped groundwater
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water, springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual resident car washing
- Flows from riparian habitats and wetlands
- De-chlorinated swimming pool discharges
- Street wash waters
- Residential building wash waters without detergents
- Discharges or flows from emergency fire-fighting activities



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If these discharges are identified as significant contributors to the MS4, they must be considered an “illicit discharge” and addressed in the IDDE Plan (i.e., the permittee must control these sources, so they are no longer significant contributors of pollutants, and/or eliminate them entirely).

1.4 RECEIVING WATERS AND IMPAIRMENTS

Table 1-1 summarizes the number of stormwater outfalls discharging to “impaired waters” within the boundaries of the Town of Nahant regulated area based on the Final Massachusetts Year 2016 Integrated List of Waters produced by MassDEP every two years. These are water bodies that do not meet water quality standards for one or more designated use(s) such as recreation or aquatic habitat.

Table 1-1. Stormwater Outfalls Discharging to Impaired Waters, Nahant, MA

Waterbody Segment that Receives Flow from the MS4	Number of Outfalls into Receiving Water Segment	Pollutants Causing Impairments	Category ¹
Lynn Harbor (MA93-52)	5	Fecal Coliform, Enterococcus	4a
Lynn Harbor (MA93-53)	6	Fecal Coliform	4a
Nahant Bay (MA93-24)	17	Fecal Coliform, Enterococcus	4a
TOTAL:	28		

¹ Category 4a includes waters for which the required TMDL(s) have already been completed and approved by EPA

Table 1-2 lists the number of stormwater outfalls discharging to waterbodies not included in the Massachusetts Year 2016 Integrated List of Waters. This list primarily contains outfalls discharging to Nahant Harbor, as well as inland outfalls discharging to wetlands.

Table 1-2. Stormwater Outfalls Discharging to Other Receiving Waters

Waterbody that Receives Flow from the MS4	Number of Outfalls into Receiving Water Segment
Nahant Harbor	10
Tributary to Lowlands Marsh	7
Tributary to Kelly Green Marsh	1
Wetland Tributary to Thicket	3
Wetland Tributary to Nahant Harbor	1
Kelly Green Marsh	4
TOTAL:	26



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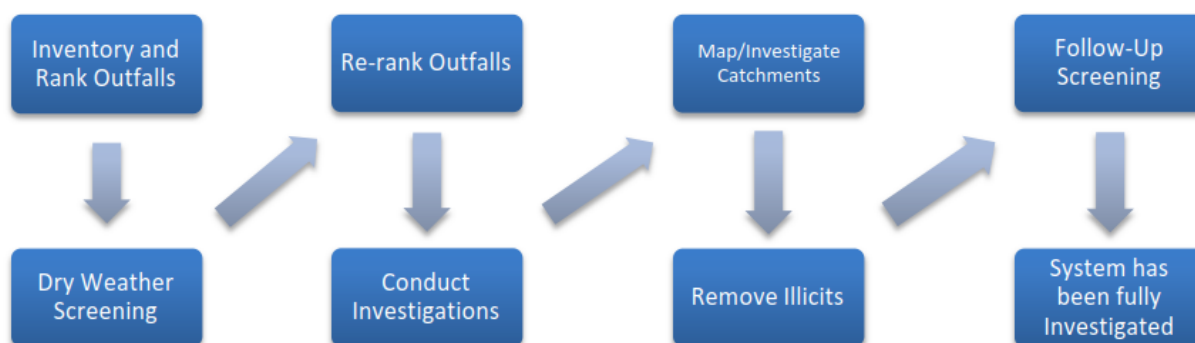
1.5 IDDE PROGRAM GOALS, FRAMEWORK, AND TIMELINE

The goals of the IDDE program are to find and eliminate illicit discharges to the MS4 and to prevent illicit discharges from happening in the future. The program consists of the following major components as outlined in the MS4 Permit:

- Legal authority and regulatory mechanism to prohibit illicit discharges and enforce this prohibition
- Storm system mapping
- Inventory and ranking of outfalls
- Dry weather outfall screening
- Catchment investigations
- Identification/confirmation of illicit sources
- Illicit discharge removal
- Follow-up screening
- Employee training
- SSO program evaluation

The IDDE investigation procedure framework is shown in Figure 1-1. The required timeline for implementing the IDDE program is shown in Table 1-3. Each of the components of this program are discussed in further detail in the subsequent sections.

Figure 1-1. IDDE Investigation Procedure Framework



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Table 1-3. IDDE Program Implementation Timeline

IDDE Program Requirement	Estimated Completion Date from July 1, 2018 (Effective Date of 2016 MS4 Permit)						Status
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years	
Written IDDE Program	X						Complete
SSO Inventory	X						Complete/Ongoing
Written Catchment Investigation Procedure		X					Complete
Phase I Mapping			X				Complete
Phase II Mapping						X	In progress
Dry Weather Outfall Screening				X			In progress
Follow-up Ranking of Outfalls & Interconnections				X			Not started
Catchment Investigations – Problem Outfalls					X		Not started
Catchment Investigations – all Problem, High and Low Priority Outfalls						X	Not started

1.6 WORK COMPLETED UNDER 2003 PERMIT

The 2003 MS4 Permit required each MS4 community to develop a plan to detect illicit discharges using a combination of storm system mapping, adopting a regulatory mechanism to prohibit illicit discharges and enforce this prohibition, and identifying tools and methods to investigate suspected illicit discharges. Each MS4 community was also required to define how confirmed discharges would be eliminated, and how the removal would be documented.

The Town has completed the following IDDE program activities consistent with the 2003 MS4 Permit requirements:

- Developed a storm drain system map containing location of outfalls and names of receiving waters.
- Adopted a Storm Drains Bylaw.
- Partnered with Nahant SWIM to distribute educational messages on stormwater topics and provide opportunities for public involvement through beach cleanup events.

In addition to the 2003 MS4 Permit requirements, other IDDE-related activities that have been completed include:

- Additional storm system mapping including the locations of storm drains, culverts, catch basins, and drain manholes.



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Authority and Statement of IDDE Responsibilities

2.0 AUTHORITY AND STATEMENT OF IDDE RESPONSIBILITIES

2.1 LEGAL AUTHORITY

The Town of Nahant passed and adopted a Stormwater By-Law on April 25, 2015, and it was approved by the Attorney General of Massachusetts on August 31, 2015. The By-Law is provided with the Stormwater Management Plan (SWMP).

The Town will review its Stormwater By-Law for consistency with the 2016 MS4 Permit.

2.2 STATEMENT OF RESPONSIBILITIES

The Nahant Department of Public Works (DPW) is the lead municipal department responsible for implementing the IDDE program. Other departments, divisions, or individuals with responsibility for aspects of the program include:

- Building Department – Enforcement of State Plumbing Code
- Planning Board – Enforcement of Bylaws and Regulations
- Police Department – Police Details as needed for inspections
- Outside Consultants – GIS/Mapping
- Nahant SWIM – Coordinate Volunteer efforts and Public Education



ILLCIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Stormwater System Mapping

3.0 STORMWATER SYSTEM MAPPING

The 2016 MS4 Permit requires a more detailed storm system map than the one required by the 2003 MS4 Permit. The revised mapping is intended to facilitate the identification of key infrastructure, factors influencing proper system operation, and the potential for illicit discharges. The 2016 MS4 Permit requires the storm system map to be updated in two phases as outlined below.

The Town has completed Phase I requirements identified below and have begun developing components of the Phase II map requirements, including mapping pipes, manholes, and catch basins. Town will continue to develop its stormwater map in accordance with MS4 Permit requirements. The Town will report on the progress of updates to the storm system map in each annual report. Updates to the stormwater mapping will be included in the SWMP.

3.1 PHASE I MAPPING

Phase I mapping must be completed within two (2) years of the effective date of the MS4 permit (June 30, 2020) and include the following information:

- Outfalls and receiving waters (previously required by the 2003 MS4 permit)
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm drain systems – Not applicable, as Town does not have any interconnections
- Town-owned stormwater treatment structures which include dry wells and a stormwater treatment ditch
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA-approved Massachusetts Integrated List of Waters report
- Initial catchment delineations. Topographic contours and drainage system information may be used to produce initial catchment delineations.

The Town has completed all updates to its stormwater mapping to meet the Phase I requirements. A copy of the existing storm system map is provided in **Attachment A**.

3.2 PHASE II MAPPING

Phase II mapping must be completed within ten (10) years of the effective date of the MS4 Permit (June 30, 2028) and include the following information:

- Outfall spatial location (latitude and longitude with a minimum accuracy of +/-30 feet)
- Pipes
- Manholes
- Catch basins



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Stormwater System Mapping

- Refined catchment delineations. Catchment delineations must be updated to reflect information collected during catchment investigations
- Municipal Sanitary and Combined Sewer System

3.3 ADDITIONAL RECOMMENDED MAPPING ELEMENTS

Although not a requirement of the 2016 MS4 Permit, the Town may include the following recommended elements in its storm system mapping.

- Storm drain material, size (pipe diameter), age
- Sanitary sewer system material, size (pipe diameter), age
- Privately owned stormwater treatment structures
- Seasonal high-water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- Alignments, dates and representation of work completed of past illicit discharge investigations
- (identifies the areas where IDDE work is complete)
- Locations of suspected confirmed and corrected illicit discharges with dates and flow estimates
- (identifies location of illicit discharges, such as specific buildings).



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Sanitary Sewer Overflows (SSOs)

4.0 SANITARY SEWER OVERFLOWS (SSOs)

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

The Town has compiled an inventory of SSOs that have discharged to the MS4 within the five (5) years prior to the effective date of the 2016 MS4 Permit, based on review of available documentation pertaining to SSOs. The inventory includes all SSOs that were reported to MassDEP. This includes SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems. All SSOs occurred outside the Town of Nahant (in Lynn, MA) but were related to the Town of Nahant's drainage system

The SSO inventory is provided with the SWMP and will be maintained and updated by the Town annually. The SSO inventory will all be included in the annual report, including the status of mitigation and corrective measures to address each identified SSO. The Inventory will include the following information, if available:

1. Location (approximate street crossing/address and receiving water, if any);
2. A clear statement of whether the discharge entered a surface water directly or entered the MS4;
3. Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge);
4. Estimated volume(s) of the occurrence;
5. Description of the occurrence indicating known or suspected cause(s);
6. Mitigation and corrective measures completed with dates implemented; and
7. Mitigation and corrective measures planned with implementation schedules.

Upon detection of an SSO, the Town will eliminate it as expeditiously as possible and take interim measures to minimize the discharge of pollutants to and from its MS4 until the SSO is eliminated. Upon becoming aware of an SSO to the MS4, the Town will provide oral notice to EPA, MassDEP, and others as applicable within 24 hours, and written notice to EPA and MassDEP within five (5) days of becoming aware of the SSO occurrence.



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Sanitary Sewer Overflows (SSOs)

The applicable MassDEP contact is:

Northeast Region
(978) 694-3215
205B Lowell Street
Wilmington, MA 01887

24-hour Emergency Line
1-888-304-1133

The EPA contact is:

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

EPA Northeast Region
Douglas Kloopman
(617) 918- 1747

The Board of Health contact is:

John Coulon, RS
(781) 581-0088
healthofficer@nahant.org
Town of Nahant, Town Hall
Nahant, MA 01908

Other notifications which may be applicable:

- Conservation Commission
- Harbormaster
- Shellfish Warden
- Department of Conservation and Recreation (DCR)
- Lynn Water and Sewer (LWSC)
- MassDOT
- State Police

How to submit a written notice within five (5) calendar days:

- Complete MassDEP Sanitary Sewer Overflow (SSO)/Bypass notification form
- Send Notification Form by Fax:



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Sanitary Sewer Overflows (SSOs)

- Massachusetts Department of Environmental Protection, Northeast Regional Office, 205B Lowell Street, Wilmington, MA 01887. **Fax: 978-694-3499**, and
- US EPA Water Technical Unit (OES 04-4), 5 Post Office Square, Suite 100, Boston, MA 02109-3912. Attn: Douglas Koopman. **Fax: 617-918-0747**.



ILLCIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Assessment and priority Ranking of Outfalls

5.0 ASSESSMENT AND PRIORITY RANKING OF OUTFALLS

The MS4 Permit requires an assessment and priority ranking of outfalls in terms of their potential to have illicit discharges and SSOs, and the related public health significance. The ranking helps determine the priority order for performing IDDE investigations and meeting permit milestones.

5.1 OUTFALL CATCHMENT DELINEATIONS

A catchment is the area that drains to an individual outfall or interconnection. The catchments for each of the MS4 outfalls have been delineated to define contributing areas for investigation of potential sources of illicit discharges. Initial catchments were delineated based on topographic contours and mapped drainage infrastructure. As described in **Section 3.0**, initial catchment delineations have been completed as part of the Phase I mapping, and refined catchment delineations will be updated as they become available to reflect information collected during catchment investigations.

5.2 OUTFALL INVENTORY AND RANKING

The Town has completed an initial outfall inventory and priority ranking to assess illicit discharge potential based on existing information, which is required within one (1) year from the effective date of the permit. The initial ranking is provided in **Attachment B**. The inventory will be updated annually to include data collected in connection with dry weather screening and other relevant inspections.

Outfalls are classified into one of the following categories:

1. **Problem Outfalls:** Outfalls with known or suspected contributions of illicit discharges are designated as Problem Outfalls. This includes any outfalls/interconnections where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:
 - Olfactory or visual evidence of sewage;
 - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water; or
 - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

Dry weather screening and sampling, as described in **Section 6.0** of this IDDE Plan and Part 2.3.4.7.b of the MS4 Permit, is not required for Problem Outfalls.

The Town has categorized zero (0) outfalls as a Problem Outfall.

2. **High Priority Outfalls:** Outfalls that have not been classified as Problem Outfalls and that are:
 - Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds; or



ILLCIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Assessment and priority Ranking of Outfalls

- Determined by the permittee as high priority based on the characteristics listed in Table 5-1, or other available information.

The Town has categorized 33 outfalls as High Priority due to discharging to a receiving water with a TMDL and/or discharging to a public beach. These outfalls were not designated as Problem outfalls because existing information does not indicate likely sewer input.

3. **Low Priority Outfalls:** Outfalls determined by the permittee as low priority based on the characteristics listed in Table 5-1, or other available information. The Town has currently categorized 21 outfalls as Low Priority Outfalls.
4. **Excluded Outfalls:** Outfalls with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land. The Town will evaluate all outfalls during catchment delineation and outfall screening efforts to determine if they should be excluded.

Outfalls were placed into the above priority categories, and then ranked based on several characteristics of the approximated initial catchment areas, where information was available. Table 5-1 provides recommended outfall priority ranking characteristics in the 2016 MS4 Permit. Available information currently includes discharge receiving water impairments, proximity to public beaches, proximity to sanitary sewer system, density of generating sites (land use/zoning), and approximate size of catchment area.

Table 5-1. Outfall Priority Ranking Characteristics

Permit Recommended Characteristics
Past discharge complaints and reports
Poor receiving water quality – the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding water quality standards for bacteria; ammonia levels above 0.5 mg/l; surfactants levels greater than or equal to 0.25 mg/l.
Density of generating sites – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
Age of development and infrastructure – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.
Sewer conversion – contributing catchment areas that were once serviced by septic systems but have been converted to sewer connections may have a high illicit discharge potential.
Historic combined sewer systems – contributing areas that were once serviced by a combined sewer system but have been separated may have a high illicit discharge potential.
Surrounding density of aging septic systems – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.



ILLCIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Assessment and priority Ranking of Outfalls

Culverted streams – any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.

Water quality limited waterbodies that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

The permittee may also consider additional relevant characteristics, including location-specific characteristics; if so, the permittee shall include the additional characteristics in its written (hardcopy or electronic) IDDE program.



6.0 DRY WEATHER OUTFALL SCREENING AND SAMPLING

Dry weather flow is a common indicator of potential illicit connections. The MS4 Permit requires all outfalls (excluding Problem and Excluded Outfalls) to be inspected for the presence of dry weather flow. The Town is responsible for conducting dry weather outfall screening, starting with High Priority outfalls, based on the initial priority ranking provided at the end of this document.

6.1 WEATHER CONDITIONS

Dry weather outfall screening and sampling may occur when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snow melt is occurring. When possible, 48 to 72 hours of dry weather is preferred. For purposes of determining dry weather conditions, precipitation data will be used from National Weather Service (NWS).

6.2 DRY WEATHER SCREENING/SAMPLING PROCEDURE

6.2.1 General Procedure

The dry weather outfall inspection and sampling procedure consists of the following general steps:

1. Identify outfall(s) to be screened/sampled based on initial outfall inventory and priority ranking
2. Acquire the necessary staff, mapping, and field equipment (see Table 6-1 for list of potential field equipment)
3. Conduct the outfall inspection during dry weather:
 - Photograph the outfall
 - Record the inspection information and outfall characteristics (using paper forms or digital form using a tablet or similar device) (Refer to the *EPA New England Bacterial Source Tracking Protocol*).
 - Look for and record visual/olfactory evidence of pollutants in flowing outfalls including odor, color, turbidity, and floatable matter (suds, bubbles, excrement, toilet paper or sanitary products). Also observe outfalls for deposits and stains, vegetation, and damage to outfall structures.
4. If flow is observed, sample and test the flow following the procedures described in **Section 6.2.3**.
5. If no flow is observed, but evidence of illicit flow exists (illicit discharges are often intermittent or transitory), revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow.
6. Input results from screening and sampling into spreadsheet/database. Include pertinent information in the outfall inventory and priority ranking.

7. Include all outfall screening and monitoring data collected during the reporting period and cumulative for the permit term in the annual report.

6.2.2 Field Equipment

Table 6-1 lists field equipment commonly used for dry weather outfall screening and sampling.

Table 6-1. Field Equipment – Dry Weather Outfall Screening and Sampling

Equipment	Use/Notes
Clipboard	For organization of field sheets and writing surface
Field Forms or Tablet for Electronic Forms	Field sheets for both dry weather inspection and dry weather sampling should be available, with extra sheets included
Chain of Custody Forms	To ensure proper handling of all samples
Pens/Pencils/Permanent Markers	For proper labeling
Nitrile Gloves	To protect the sampler as well as the sample from contamination
Flashlight/headlamp with batteries	For looking in outfalls or manholes, helpful in early mornings as well
Cooler with Ice	For transporting samples to the laboratory
Digital Camera	For documenting field conditions at time of inspection
Personal Protective Equipment (PPE)	Reflective vest, safety glasses, and boots at a minimum
GPS Receiver	For taking spatial location data
Distilled water	For use with test kits
Water Quality Meters	Hand-held meters for testing for various water quality parameters.
Test Kits (see Table 6-3)	For ammonia and surfactants. Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day
Label Tape	For labeling sample containers
Sample Containers	Make sure all sample containers are clean. Keep extra sample containers on hand at all times. Make sure there are proper sample containers for what is being sampled for (i.e., bacteria analysis requires sterile containers and preservatives (see Table 6-4)).
Pry Bar or Pick	For opening catch basins and manholes when necessary
Sandbags	For damming low flows in order to take samples
Small Mallet or Hammer	Helping to free stuck manhole and catch basin covers
Utility Knife	Multiple uses
Measuring Tape	Measuring distances and depth of flow
Traffic Cones	Safety
Hand Sanitizer	Disinfectant/decontaminant
Zip Ties/Duct Tape	For making field repairs
Rubber Boots/Waders	For accessing shallow streams/areas
Sampling Pole/Dipper/Sampling Cage	For accessing hard-to-reach outfalls and manholes
5-gallon bucket with cover	Disposal of chemical waste

6.2.3 Sample Collection and Analysis

If flow is present during a dry weather outfall inspection, samples will be collected and analyzed for the required permit parameters identified in Table 6-2.

Table 6-2. Dry Weather Flow Analysis

Parameter	Analysis Methods
Ammonia	Field Test Kit
Chlorine	Field Test Kit or Portable Meter
Conductivity	Portable Meter
Salinity	Portable Meter
Temperature	Portable Meter
Surfactants	Field Test Kit
Indicator Bacteria (E. coli or Enterococcus)	EPA Certified Laboratory Procedure (40 CFR Part 136)

The general procedure for collection of outfall samples is as follows:

1. Fill out all sample information on sample bottles and field sheets
2. Put on protective gloves (nitrile/latex/other) before sampling.
3. Collect sample with dipper or directly into sample containers. If possible, collect water from the flow directly into the sample bottle. Be careful not to disturb sediments.
4. If using a dipper or other device, triple rinse the device with distilled water and then in water to be sampled, except for bacteria sampling.
5. Use test strips, test kits, and field meters (rinse similar to dipper) for most parameters (See Table 6-3).
6. Place laboratory samples on ice for analysis of bacteria.
7. Fill out chain-of-custody form for laboratory samples.
8. Coordinate with Laboratory to pick-up/drop-off samples.
9. Store used test strips and test kit waste/ampules properly in a 5-gallon bucket with a cover, store and dispose of properly.
10. Decontaminate all testing personnel and equipment.

In the event that an outfall is submerged, either partially or completely, or inaccessible, field staff will proceed to the first accessible upstream manhole or structure for observation and sampling and will report

the location with the screening results. Field staff will continue to the next upstream structure until there is no longer an influence from the receiving water on the visual inspection or sampling. In some cases, there may be drain connections downstream of the first structure free of influence from the receiving water. These situations will be reviewed on a case-by-case basis. The Town may choose to complete screening at multiple locations or may clear downstream drain sections through building inspections.

All analysis with the exception of indicator bacteria can be performed with field test kits or field instrumentation and are not subject to 40 CFR part 136. Field kits need to have appropriate detection limits and ranges. Table 6-3 lists various field test kits and field instruments that can be used for outfall sampling associated with the 2016 MS4 Permit parameters, other than indicator bacteria. Preservation is not required if samples are analyzed immediately.

Table 6-3. Sampling Parameters and Analysis Methods

Analyte or Parameter	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	CHEMetrics™ V-2000 Colorimeter Hach™ DR/890 Colorimeter Hach™ Pocket Colorimeter™ II	CHEMetrics™ K-1410 CHEMetrics™ K-1510 (series) Hach™ NI-SA Hach™ Ammonia Test Strips
Surfactants (Detergents)	CHEMetrics™ I-2017	CHEMetrics™ K-9400 and K-9404 Hach™ DE-2
Chlorine	CHEMetrics™ V-2000, K-2513 Hach™ Pocket Colorimeter™ II	NA
Conductivity	CHEMetrics™ I-1200 YSI Pro30 YSI EC300A Oakton 450	NA
Temperature	YSI Pro30 YSI EC300A Oakton 450	NA
Salinity		NA
Temperature		NA
Indicator Bacteria: <i>E. coli</i> (freshwater) Enterococcus (saltwater)	EPA certified laboratory procedure (40 CFR § 136)	NA

Testing for indicator bacteria must be conducted using analytical methods and procedures found in 40 CFR § 136.1 Samples for laboratory analysis must also be stored and preserved in accordance with procedures found in 40 CFR § 136. Table 6-4 lists analytical methods, detection limits, hold times, and preservatives for laboratory analysis of dry weather sampling parameters.

¹ 40 CFR § 136: <http://www.ecfr.gov/cgi-bin/text-idx?SID=b3b41fdea0b7b0b8cd6c4304d86271b7&mc=true&node=pt40.25.136&rgn=div5>

Table 6-4. Required Analytical Methods, Detection Limits, Hold Times, and Preservatives⁴

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Ammonia	EPA: 350.2, SM: 4500-NH ₃ C	0.05 mg/L	28 days	Cool ≤6°C, H ₂ SO ₄ to pH <2, No preservative required if analyzed immediately
Surfactants	SM: 5540-C	0.01 mg/L	48 hours	Cool ≤6°C
Chlorine	SM: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required
Temperature	SM: 2550B	NA	Immediate	None Required
Specific Conductance	EPA: 120.1, SM: 2510B	0.2 µs/cm	28 days	Cool ≤6°C
Salinity	SM: 2520	-	28 days	Cool ≤6°C
Indicator Bacteria: <i>E. coli</i> Enterococcus	<i>E. coli</i> EPA: 1603 SM: 9221B, 9221F, 9223 B Other: Colilert®, Colilert-18® <i>Enterococcus</i> EPA: 1600 SM: 9230 C Other: Enterolert®	<i>E. coli</i> EPA: 1 cfu/100mL SM: 2 MPN/100mL Other: 1 MPN/100mL <i>Enterococcus</i> EPA: 1 cfu/100mL SM: 1 MPN/100mL Other: 1 MPN/100mL	8 hours	Cool ≤10°C, 0.0008% Na ₂ S ₂ O ₃

SM = Standard Methods

6.2.4 Safety

In some cases, sampling may take place within a roadway or risky environment. It is recommended to request police detail when working within major roadways and be compliant with Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) standards to implement proper traffic control, including traffic cones and signage as needed. Wear proper PPE including high-visibility safety vests, safety glasses, boots, and gloves at a minimum. It is assumed that confined space entry will not be required.

6.3 INTERPRETING OUTFALL SAMPLING RESULTS

Outfall analytical data from dry weather sampling can be used to help identify the major type or source of discharge. Table 6-5 shows values identified by the U.S. EPA and the Center for Watershed Protection as typical threshold screening values for select parameters. These represent the typical threshold concentration (or value) of each parameter expected to be found in stormwater. Screening values that exceed these benchmarks may be indicative of pollution and/or illicit discharges.

Table 6-5. Benchmark Field Measurements for Select Parameters

Analyte or Parameter	Benchmark
Ammonia	>0.5 mg/L
Conductivity	>2,000 μ S/cm
Surfactants	>0.25 mg/L
Chlorine	>0.02 mg/L (detectable levels per the 2016 MS4 Permit)
Indicator Bacteria ² : <i>E. coli</i>	The geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 mL, and no single sample taken during the bathing season shall exceed 235 colonies per 100 mL
pH	6.5 – 8.3 standard units and not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class. (314CMR04; Class B)

6.4 FOLLOW-UP RANKING OF OUTFALLS

The Town will update and re-prioritize the initial outfall ranking based on information gathered during dry weather screening. Outfalls where relevant information was found indicating sewer input to the MS4, or where sampling results indicate sewer input are highly likely to contain illicit discharges from sanitary sources will be ranked at the top of the High Priority Outfalls category for investigation. Other outfalls may be re-ranked based on any new information from dry weather screening.

² Massachusetts Water Quality Standards:
<http://www.mass.gov/eea/docs/dep/service/regulations/314cmr04.pdf>

7.0 CATCHMENT INVESTIGATIONS

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to trace the source of the potential discharge within the outfall catchment area. Catchment investigation techniques include but are not limited to review of maps, historic plans, and records; manhole observation; dry and wet weather sampling; video inspection; and dye testing. This section outlines a systematic procedure to investigate outfall catchments to trace the source of potential illicit discharges.

Catchments are investigated in order of priority, with catchments draining to Problem Outfalls investigated first, followed by High Priority and then Low Priority Outfalls. Within each category the catchments are investigated in the order they are ranked. Work can be ongoing in multiple catchments simultaneously to expedite the process. Table 7-1 provides a schedule for completion of catchment investigations.

Table 7-1. IDDE Schedule for Completion of Catchment Investigations

Parameter	Start	Complete
Problem Catchments ¹	No later than July 1, 2020 (2 years from permit effective date)	By July 1, 2025 (within 7 years of permit effective date)
Catchments with sewer input identified at outfall ²	No permit requirement	By July 1, 2025 (within 7 years of permit effective date)
All Catchments	No permit requirement	By July 1, 2028 (within 10 years of permit effective date)

¹The Town currently has not designated any Problem Catchments

²Likely sewer input indicators are any of the following:

- Olfactory or visual evidence of sewage;
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water; or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

All data collected as part of the catchment investigations will be recorded and reported in each annual report.

7.1 SYSTEM VULNERABILITY FACTORS

The Town will review relevant mapping and historic plans and records to identify areas within the catchment with higher potential for illicit connections. The following information will be reviewed:

- Plans related to the construction of the storm drainage network
- Plans related to the construction of the sewer drainage network
- Prior work on storm drains or sewer lines
- Complaint records related to SSOs

Based on the review of this information, the presence of any of the following **System Vulnerability Factors (SVFs)** will be identified for each catchment:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
- Common or twin-invert manholes serving storm and sanitary sewer alignments
- Common trench construction serving both storm and sanitary sewer alignments
- Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
- Areas formerly served by combined sewer systems
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer System Evaluation Surveys, or other infrastructure investigations
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs
- Any sanitary sewer and storm drain infrastructure more than 40 years old.

The Permit also recommends considering factors related to septic systems, which are not applicable to the Town because there are no septic systems remaining.

An SVF inventory will be documented for each catchment and retained as part of this IDDE Plan in **Attachment C**.

7.2 DRY WEATHER MANHOLE INSPECTIONS

The Town will implement a dry weather storm drain network investigation that involves systematically and progressively observing, sampling, and evaluating key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges. This is required for all Problem, High Priority, and Low Priority catchments.

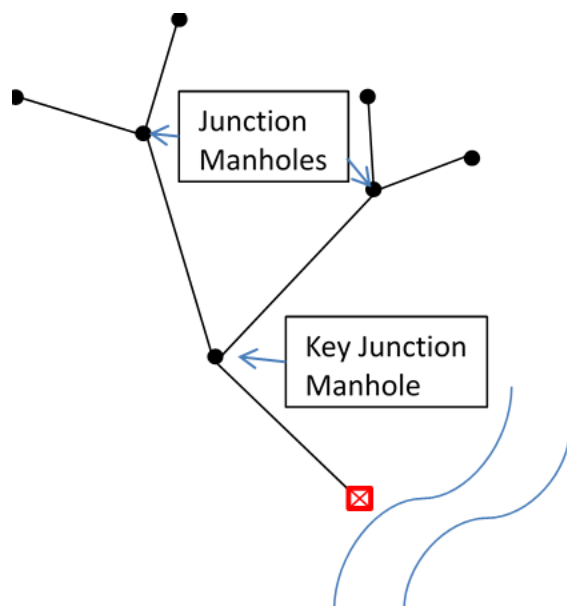
The DPW will be responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information will be incorporated into the storm system map, and catchment delineations will be refined based on the field investigation, where necessary.

Several important terms related to the dry weather manhole inspection program are defined by the 2016 MS4 Permit as follows:

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.
- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

In preparation for field inspections, all key junction manholes will be identified. For all catchments identified for investigation during dry weather, field crews will systematically inspect all key junction manholes for evidence of illicit discharges. This program involves progressive inspection and sampling at manholes in the storm drain network to isolate and eliminate illicit discharges.

Figure 7-1. Key Junction Manholes



7.3.2 Storm Drain Cleaning

Review cleaning records to determine the last time storm drains in the catchment were cleaned and identify possible candidates for cleaning. As a general rule, if it has been more than five (5) years since a drain has been cleaned, it should be flagged for cleaning prior to investigations. However, it should be noted that large diameter pipes may not require cleaning as frequently. In addition, any known blockages will be removed, and known problem areas will be cleaned prior to the inspection of manholes. If cleaning

is not completed prior to the investigation, there will be a note made on the manhole inspection form if cleaning is needed.

7.3.3 Manhole Inspection Methodology

The manhole inspection methodology will be conducted in one of two ways (or a combination of both):

- By working progressively down from the upper parts of the catchment toward the outfall (“top-down”); or
- By working progressively up from the outfall and inspecting key junction manholes along the way (“bottom-up”).

The decision to move up or down the system depends on the nature of the drainage system (e.g., size, receiving water influence) and availability of information on the catchment and drainage system. Starting upstream and working progressively down is the preferred option, as it is typically more efficient. There are some exceptions where it is efficient to start inspections at the outfall and work progressively upstream. This approach is most appropriate for small catchment areas free of influence from receiving waters, and catchments with limited or unreliable mapped infrastructure.

Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment.

Manhole investigation begins with key junction manholes and continues with junction manholes and other manholes as needed to isolate illicit discharges. Manhole inspections will proceed as follows (also as depicted in flowchart provided in **Attachment D**):

1. Manholes will be opened and inspected for visual and olfactory evidence of illicit connections during dry weather. Dry weather is defined as less than 0.1 inches of rain in the preceding 24 hours. When possible, 48 to 72 hours of dry weather preceding the investigation is preferred. A sample field inspection form is provided in **Attachment E**.

Visual evidence may include toilet paper, sanitary products, sewage, soap, food, or other indications of anything other than stormwater. Olfactory evidence may include sewage, soap, laundry, bleach or other odors not typical of stormwater.

2. If flow is observed, a sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis will be in accordance with procedures outlined in **Section 6.0**.
3. If no flow is observed, the inlets or outlet to the manhole may be partially blocked using sandbags or similar barriers (e.g., caulking, weirs/plates, or other temporary barriers) for 48 hours, if dry weather is predicted for the next 48 hours. Following 48 hours of dry weather the manholes are re-inspected, and any flow that was captured behind the sandbags is tested in accordance with the protocols outlined in Step 2. If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of intermittent discharge. The inlets of the manhole may be

blocked in the case of a manhole with multiple stormwater pipes entering (junction manhole) to isolate the source of the flow, and the outlet may be blocked if there is a single pipe entering.

To install sandbags, swing the sandbag into place using rope and tie the rope to the top rung.

4. Where sampling results or visual or olfactory evidence indicate potential illicit discharges, the area draining to the manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
5. Subsequent manhole inspections will proceed until the location of suspected illicit discharges can be isolated to a pipe segment between two manholes.
6. If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling.

7.3 WET WEATHER OUTFALL SAMPLING

Where a minimum of one (1) SVF is identified based on previous information or the catchment investigation, a wet weather investigation must also be conducted at the associated outfall. The DPW will be responsible for implementing the wet weather outfall sampling program and making updates as necessary.

Outfalls will be inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in sanitary sewers result in discharges of sanitary flow to the MS4.

Wet weather outfall sampling will proceed as follows:

1. At least one wet weather sample will be collected at the outfall for the same parameters required during dry weather screening, and the same form will be used to record data.
2. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall. The permit does not require a minimum rainfall event prior to wet weather screening. The permit also does not require capturing “first flush”.
3. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.

7.4 SOURCE ISOLATION AND CONFIRMATION

Once the source of an illicit discharge is approximated between two manholes, more detailed investigation techniques will be used to isolate and confirm the source of the illicit discharge. The following methods may be used in isolating and confirming the source of illicit discharges:

- Dye Testing

- CCTV/Video Inspections

These methods are described in the sections below.

7.4.1 Dye Testing

Dye testing involves flushing non-toxic dye into plumbing fixtures such as toilets, showers and sinks, and observing nearby storm drains and sewer manholes as well as stormwater outfalls for the presence of the dye. It is beneficial to inform residents and business owners of properties that will need to be accessed for a dye test, prior to conducting the dye test. The intention is to increase the likelihood of gaining access to buildings that need to be dye tested. Notification typically includes flyers and door hangers for single family homes, businesses, and building lobbies for multi-family dwellings.

A team of two or more people is needed to perform dye testing (ideally, all with two-way radios). The team starts by inspecting the discharge piping at the lowest building level to determine the location and number of sanitary and storm drain discharge points. Based on this inspection, a fixture or fixtures are selected for dye testing. When possible, the fixture selected should be at the lowest level of the building with plumbing fixtures. If discharge piping is visible and the team confirms there is a single sanitary discharge, one fixture will be tested. When there are multiple discharge points observed, or it is not possible to confirm the configuration of discharge piping, multiple fixtures may be tested. In this situation it is recommended to select fixtures on different sides of the building.

Once the fixtures are selected, one person is inside the building, while the others are stationed at the appropriate storm drain and sanitary sewer manholes (which should be opened) and/or outfalls. The person inside the building adds dye into a plumbing fixture (i.e., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The person inside the building then radios to the outside crew that the dye has been added, and the outside crew watches for the dye in the storm drain and sanitary sewer, recording the presence or absence of the dye.

The test can be relatively quick (about 15-30 minutes per test), effective (results are usually definitive), and inexpensive. Dye testing is best used when the likely source of an illicit discharge has been narrowed down to a few specific houses or businesses.

Green dye typically shows up best in the sewer and storm drain. However, if multiple fixtures in the same building are being tested or multiple buildings along the same stretch of pipe, it may be necessary to use different color dyes to differentiate. Red is typically the second-best color choice, and blue the next. Another option is to space out the dye tests to allow time for the dye to clear from the sewer/drain in between tests.

Dye is available in liquid or tablet form. Liquid is commonly used and works faster but presents a higher risk for spills and can stain clothes and carpets. It is important to handle with care.

In areas with very flat drains, it can take longer for the dye to make its way to a downstream manhole. There are a few ways to address this issue; by inspecting the storm drain with a video camera during dye testing, or by using a nearby hydrant to introduce flow to the storm drain and push dye downstream.

7.4.2 CCTV/Video Inspection

Another method of source isolation involves the use of mobile video cameras that are guided remotely through stormwater drain lines to observe possible illicit discharges. IDDE program staff can review the videos and note any visible illicit discharges. While this tool is both effective and usually definitive, it can be costly and time consuming when compared to other source isolation techniques. CCTV is recommended in cases where dye testing is inconclusive (dye not found, or dye found in sewer and storm drain), and in cases where dye testing did not identify a source. As noted above, it can also be combined with dye testing.

7.5 ILLICIT DISCHARGE REMOVAL

When the specific source of an illicit discharge is identified, the Town will exercise its authority as necessary to require its removal within (60) sixty days. The annual report will include the status of IDDE investigation and removal activities including the following information for each confirmed source:

- The location of the discharge and its source(s)
- A description of the discharge
- The method of discovery
- Date of discovery
- Date of elimination, mitigation or enforcement action, OR planned corrective measures, and a schedule for completing the illicit discharge removal
- Estimate of the volume of flow removed.

The volume of flow can be estimated using an assumed volume of sewage from a typical house or can be based on water use. If only a portion of the building is illicitly connected, the volume of sewage must be proportionally reduced.

7.5.1 Confirmatory Outfall Screening

Within one (1) year of removal of all identified illicit discharges within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless SVFs have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation.

7.6 ONGOING SCREENING

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be re-prioritized for screening and scheduled for ongoing screening once every five (5) years. Ongoing screening will consist of dry weather screening and sampling consistent with the procedures described in **Section 6.0** of this plan. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due

to SVFs and will be conducted in accordance with the procedures described in **Section 7.3**. All sampling results will be reported in the annual report.

8.0 TRAINING

Annual IDDE training will be made available to all employees involved in the IDDE program. This training will at a minimum include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. Training records will be maintained in the SWMP. The frequency and type of training will be included in the annual report.

9.0 PROGRESS REPORTING

The progress and success of the IDDE program will be evaluated on an annual basis. The evaluation will be documented in the annual report. The success of the IDDE program will be measured by the IDDE activities completed within the required permit timelines.

10.0 REFERENCES

United States Environmental Protection Agency (EPA). 2016. *Massachusetts Small MS4 General Permit*. <https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>. Accessed June 2019.

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ATTACHMENT A

Phase I Map



Town of Nahant

Phase I MS4 Map
6/25/2021

DRAFT



Legend

- | | | |
|---------------------|-----------------|----------------------|
| Drainage Ditch | Wetlands | Tri_KellyGreenMarsh |
| Thicket | LynHarbor_52 | Tri_LowlandsMarsh |
| Drain Structures | LynHarbor_53 | Tri_NahantHarbor |
| Stormwater Outfalls | Nahant_Habor | Tri_Thicket |
| Roads | NahantBay | Nahant Town Boundary |
| Public Beaches | KellyGreenMarsh | |

0 0.1 0.2 0.4 Miles



Nahant Beach

Nahant Bay (MA93-24)
TMDL No. 50121
Impairments: fecal coliform, enterococcus

Black Rock Beach

Short Beach

Lynn Harbor (MA93-52)
TMDL No. 50122
Impairments: fecal coliform, enterococcus

Lynn Harbor (MA93-53)
TMDL No. 50122
Impairments: fecal coliform

Tudor Beach

Nahant Harbor
No impairments

Canoe Beach

ATTACHMENT B

Outfall Priority Ranking



Town of Nahant

DRAFT

Initial Outfall Priority Ranking

6/27/2019

			Parameters							
			Weighting:	40%	20%	10%	5%	25%		
Temp Outfall ID	Waterbody Segment that Receives Flow from the MS4	Pollutants Causing Impairments	Priority	Proximity to Beach ¹	TMDL ²	Land Use/Zoning ³	Size of Catchment ⁴	Proximity to Sewer ⁵	Score	Ranking
LH52-1	Lynn Harbor (MA93-52)	Fecal Coliform	High-TMDL/Beach	3	3	3	1	2	2.65	1
LH52-2	Lynn Harbor (MA93-52)	Fecal Coliform	High-TMDL/Beach	3	3	3	1	2	2.65	1
NB-17	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	3	3	3	1	2	2.65	1
NB-8	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	3	3	3	1	2	2.65	1
LH52-3	Lynn Harbor (MA93-52)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-1	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-10	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-2	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-3	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-4	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-7	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NB-9	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL/Beach	2.5	3	3	1	2	2.45	5
NH-4	Nahant Harbor		High-Beach	3	1	3	3	2	2.35	14
NH-5	Nahant Harbor		High-Beach	3	1	3	3	2	2.35	14
NH-6	Nahant Harbor		High-Beach	3	1	3	3	2	2.35	14
NH-7	Nahant Harbor		High-Beach	3	1	3	3	2	2.35	14
NH-3	Nahant Harbor		High-Beach	2.5	1	3	3	2	2.15	18
NB-16	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	1	3	3	1	2	1.85	5
LH53-1	Lynn Harbor (MA93-53)	Fecal Coliform	High-TMDL	0	3	3	3	2	1.55	19
LH53-2	Lynn Harbor (MA93-53)	Fecal Coliform	High-TMDL	0	3	3	3	2	1.55	19
LH53-3	Lynn Harbor (MA93-53)	Fecal Coliform	High-TMDL	0	3	3	3	2	1.55	19
LH53-4	Lynn Harbor (MA93-53)	Fecal Coliform	High-TMDL	0	3	3	3	2	1.55	19
LH53-5	Lynn Harbor (MA93-53)	Fecal Coliform	High-TMDL	0	3	3	3	2	1.55	19
LH53-6	Lynn Harbor (MA93-53)	Fecal Coliform	High-TMDL	0	3	3	3	2	1.55	19
LH52-4	Lynn Harbor (MA93-52)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
LH52-5	Lynn Harbor (MA93-52)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-11	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-12	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-13	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-14	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-5	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-6	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	2	1.45	25
NB-15	Nahant Bay (MA93-24)	Fecal Coliform	High-TMDL	0	3	3	1	1	1.2	33

				Parameters						
Weighting:				40%	20%	10%	5%	25%		
Temp Outfall ID	Waterbody Segment that Receives Flow from the MS4	Pollutants Causing Impairments	Priority	Proximity to Beach ¹	TMDL ²	Land Use/Zoning ³	Size of Catchment ⁴	Proximity to Sewer ⁵	Score	Ranking
NH-9	Nahant Harbor		Low	1	1	3	3	2	1.55	34
NH-10	Nahant Harbor		Low	1	1	3	3	1	1.3	49
NH-1	Nahant Harbor		Low	0	1	3	3	2	1.15	34
NH-2	Nahant Harbor		Low	0	1	3	3	2	1.15	34
NH-8	Nahant Harbor		Low	0	1	3	3	2	1.15	34
LM-1	Tributary to Lowlands Marsh		Low	0	1	3	1	2	1.05	38
LM-6	Tributary to Lowlands Marsh		Low	0	1	3	1	2	1.05	38
LM-7	Tributary to Lowlands Marsh		Low	0	1	3	1	2	1.05	38
TH-1	Wetland Tributary to Thicket		Low	0	1	2	3	2	1.05	38
TH-2	Wetland Tributary to Thicket		Low	0	1	2	3	2	1.05	38
TH-3	Wetland Tributary to Thicket		Low	0	1	2	3	2	1.05	38
TKGM-1	Tributary to Kelly Green Marsh		Low	0	1	2	3	2	1.05	38
KGM-1	Kelly Green Marsh		Low	0	1	2	1	2	0.95	45
KGM-2	Kelly Green Marsh		Low	0	1	2	1	2	0.95	45
KGM-3	Kelly Green Marsh		Low	0	1	2	1	2	0.95	45
KGM-4	Kelly Green Marsh		Low	0	1	2	1	2	0.95	45
NHW-1	Wetland Tributary to Nahant Harbor		Low	0	1	1	1	2	0.85	50
LM-2	Tributary to Lowlands Marsh		Low	0	1	3	1	1	0.8	51
LM-3	Tributary to Lowlands Marsh		Low	0	1	3	1	1	0.8	51
LM-4	Tributary to Lowlands Marsh		Low	0	1	3	1	1	0.8	51
LM-5	Tributary to Lowlands Marsh		Low	0	1	3	1	1	0.8	51

¹ Proximity to Beach: 3 = outfall discharges directly to a public beach; 2.5 = outfall discharges near a public beach; 1 = outfall discharges near a beach (not public); 0 = outfall discharge not near a beach

² TMDL: 3 = Approved TMDL; 1 = no TMDL required

³ Land Use/Zoning: 3 = Primarily dense residential and commercial; 2 = some residential and some forest/open space or golf course; 1 = primarily forest/conservation land with some less dense residential

⁴ Size of catchment is based on number of drainage structures (manholes and catch basins); areas with more structures are ranked higher

⁵ Proximity to Sewer: 2= Sewer located in close proximity or overlapping; 1= No sewer in close proximity

ATTACHMENT C

SVF Inventory



Outfall ID	Receiving Water	Required SVFs								Recommended SVFs	
		1 History of SSOs	2 Common or Twin Invert Manholes	3 Common Trench Construction	4 Storm/Sanitary Crossings (Sanitary Above)	5 Sanitary Lines with Underdrains	6 Inadequate Sanitary Level of Service	7 Areas Formerly Served by Combined Sewers	8 Sanitary Infrastructure Defects	9 SSO Potential in Event of System Failures	10 Sanitary and Storm Drain Infrastructure >40 Years Old
NB-6	Nahant Bay (MA93-24)	No									
NB-7	Nahant Bay (MA93-24)	No									
NB-8	Nahant Bay (MA93-24)	No									
NB-9	Nahant Bay (MA93-24)	No									
NH-1	Nahant Harbor	No									
NH-10	Nahant Harbor	No									
NH-2	Nahant Harbor	No									
NH-3	Nahant Harbor	No									
NH-4	Nahant Harbor	No									
NH-5	Nahant Harbor	No									
NH-6	Nahant Harbor	No									
NH-7	Nahant Harbor	No									
NH-8	Nahant Harbor	No									
NH-9	Nahant Harbor	No									
NHW-1	Wetland Tributary to Nahant Harbor	No									
TH-1	Wetland Tributary to Thicket	No									
TH-2	Wetland Tributary to Thicket	No									
TH-3	Wetland Tributary to Thicket	No									
TKGM-1	Tributary to Kelly Green Marsh	No									

Presence/Absence Evaluation Criteria:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
- Common or twin-invert manholes serving storm and sanitary sewer alignments
- Common trench construction serving both storm and sanitary sewer alignments
- Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
- Areas formerly served by combined sewer systems
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs
- Any sanitary sewer and storm drain infrastructure greater than 40 years old

ATTACHMENT D

IDDE Flowchart



Protocol for Dry Weather Manhole Inspections

Proceed after a minimum of 24 hours of dry weather (less than 0.1" of rain). Recommend 48-72 hours when possible.

Is there visual/olfactory evidence of contamination?

Visual evidence may include toilet paper, sanitary products, sewage, soap, food, or other indications of anything other than stormwater. Olfactory evidence may include sewage, soap, laundry, bleach or other odors not typical of stormwater.

Yes

No

Is flow present in Manhole ?

Yes

No

Collect samples for field kit analysis of ammonia, surfactants, and chlorine.

Do results indicate likely sewer input?

- Olfactory or visual evidence of sewage;
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water; or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

No

Yes

Flag area draining to the manhole for further upstream manhole investigation and/or isolation and confirmation of sources

Sandbag dry inlet(s) if dry weather is forecasted over next 48 hours.
Return after 48 hours. Did it rain since sandbags were placed?

Yes

No

Sandbag fouled. Start again from beginning at next dry weather opportunity

Was flow captured behind sandbag?

Yes

No

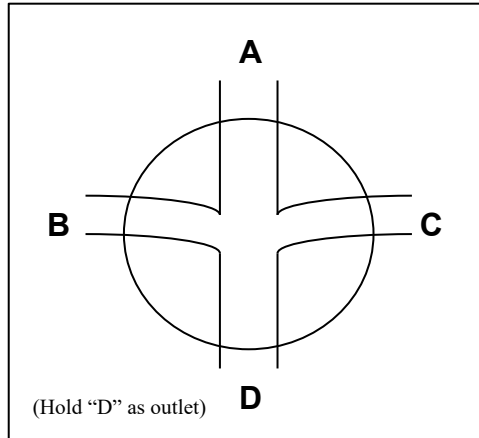
Upstream pipe network can be ruled out as a source of contamination

ATTACHMENT E

Sample Manhole Inspection Form



MH#



Depth to Wet Ring from Rim: _____

Manhole Type:	Sanitary <input type="checkbox"/>	Storm <input type="checkbox"/>	Combined <input type="checkbox"/>	Common <input type="checkbox"/>					
Location of MH:	Roadway <input type="checkbox"/>	Sidewalk <input type="checkbox"/>	Roadside <input type="checkbox"/>	Alley <input type="checkbox"/>	Easement <input type="checkbox"/>	Other <input type="checkbox"/>			
Manhole Material:	Brick <input type="checkbox"/>	Clay Block <input type="checkbox"/>	Poured Concrete <input type="checkbox"/>		Manhole Block <input type="checkbox"/>	Precast Concrete <input type="checkbox"/>	Other <input type="checkbox"/>		
Paved Area Around MH:	Satisfactory <input type="checkbox"/>		Cracked <input type="checkbox"/>	<input type="checkbox"/>	Missing Pavement <input type="checkbox"/>		Vegetation Growth		
Unpaved Area Around MH:	Satisfactory <input type="checkbox"/>		Eroded <input type="checkbox"/>						
Odors:									
Recommendations:	No Action <input type="checkbox"/>	Rebuild <input type="checkbox"/>	Line Manhole Wall <input type="checkbox"/>		Reset Frame <input type="checkbox"/>	Clean / Remove debris from Invert <input type="checkbox"/>			

Pipe (A-F):						
Ammonia , mg/L (Compliant ≤ 0.5 mg/L)						
Surfactants , mg/L (Compliant ≤ 0.25 mg/L)						
Chlorine , mg/L (Compliant < 0.02 mg/L)						

[illegible]

APPENDIX G

Training Records

STORMWATER MANAGEMENT PROGRAM (SWMP)

Certification

1.0 CERTIFICATION

Authorized Representative: 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 of the Permit or by a duly authorized representative of that person in accordance with Appendix B, Subsection 11.B of the Permit. 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 in Appendix A.

"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: Antonio Barletta

Signature: _____

Date: 9/23/21

