

Stormwater Management Program (SWMP) Plan

Town of Dennis, Massachusetts

Prepared June 30, 2019
Revised June 30, 2021

Prepared For:

Town of Dennis
685 Route 134
South Dennis, MA 02660



Prepared By:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740



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Stormwater Management Program (SWMP) Plan Certification

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

Name: _____ Title: _____

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- Appendix B** – Regulatory Review and Legal Authority
- Appendix C** – Stormwater System Mapping
- Appendix D** – Inventory of Town-Owned Property
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- Appendix F** – Street Sweeping Optimization Plan
- Appendix G** – SWPPP Exemption Memorandum
- Appendix H** – List of Stormwater BMPs
- Appendix I** – Annual Reports

1 Introduction

Dennis is one of many Massachusetts communities regulated under the Environmental Protection Agency's (USEPA) National Pollutant Discharge Elimination System (NPDES) Phase II rule (40 CFR 122). The rule requires regulated operators of municipal separate storm sewer systems (MS4) to develop a Stormwater Management Program (SWMP) and Best Management Practices (BMPs) to reduce the impacts of stormwater discharges. The requirements are outlined in the NPDES General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts, which was signed on April 4, 2016, with an effective date of July 1, 2018, hereinafter referred to as the 2016 MS4 Permit. After several years of litigation, the permit was updated in December 2020 with a revised effective date of January 6, 2021. Authorization to discharge expires at June 30, 2022.

This SWMP Plan describes and details the activities and measures that are being implemented to meet the terms and conditions of the permit.

1.1 Regulatory Background

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

On May 1, 2003, EPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 MS4 Permit) consistent with the Phase II rule. The 2003 MS4 Permit covered "traditional" (i.e., cities and towns) and "non-traditional" (i.e., certain Federal and state agencies and/or facilities) MS4 Operators located in the states of Massachusetts and New Hampshire. This permit expired on May 1, 2008 but remained in effect until operators were authorized under the USEPA's 2016 NPDES General Permit for Stormwater Discharges from MS4 in Massachusetts, hereafter referred to as the "2016 Massachusetts MS4 Permit", "2016 Permit", "MS4 Permit, and/or "2016 MS4 Permit" which replaces the 2003 MS4 Permit.

The 2016 Massachusetts MS4 Permit was signed on April 4, 2016 with an original effective date of July 1, 2017, however was postponed by 1 year to a new effective date of July 1, 2018. The permit was cosigned by the Massachusetts Department of Environmental

Protection (MassDEP) and thus is jointly regulated by EPA and MassDEP for Massachusetts permittees.

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

1.2 MS4 Program

As required by the 2016 MS4 Permit, The Town of Dennis submitted a Notice of Intent (NOI) and required accompanying information, including endangered species, historic preservation, and an outfall map to EPA Region 1 by the September 28, 2018 deadline (**Appendix A**) requesting authorization to discharge under the new permit. Dennis received official authorization to discharge stormwater from its MS4 on April 5, 2019. Authorization to discharge expires at June 30, 2022.

This Stormwater Management Program Plan has been developed by the Town of Dennis to address the requirements of the 2016 MS4 Permit as a follow-up to the NOI. This SWMP Plan documents the Town of Dennis' program, including Best Management Practices, plans, activities, and measures that have been implemented to date, those that are ongoing, and those proposed for the future to comply with the 2016 MA MS4 Permit. This is a "living" document and should be updated and/or modified as required during the permit term as the permittee's activities are modified, changed or updated to meet permit conditions during the permit term.

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

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

In addition to the 6 MCMs above, permittees must also address water quality impacts from waterbodies with approved Total Maximum Daily Loads (TMDLs) and certain impairments, generally known as water quality limited waterbodies.

1.3 Regulated Area

Requirements of the 2016 MS4 Permit are limited to a regulated area, defined as the Town's Urbanized Areas (UAs) which generally constitute the largest and most dense areas of settlement in a region. The Bureau of the Census determines UAs by applying a detailed set of published UA criteria to the latest decennial census data. Although the full UA definition is complex, the Bureau of the Census' general definition of a UA, based on population and population density, is provided below:

“An urbanized area (UA) is a densely settled core of census tracts and/or census blocks that have population of at least 50,000, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. It is a calculation used by the Bureau of the Census to determine the geographic boundaries of the most heavily developed and dense urban areas.”

The most recent UA maps are based on the 2010 Census. **Figure 1-1** shows the UA in the Town of Dennis, which covers almost the entire area of the Town. Per the most recent census data, the UA covers 14,108 people out of a total of 14,221 in the Town, or approximately 99% of the population. The UA area shifted slightly since the 2000 Census, moving down from the previously developed northeast and northwest corners of the Town to the previously undeveloped central area, for a slight decrease in the UA overall. However, it should be noted that EPA defines the regulated UA as applying to any area of the community identified by an official Census, regardless of the year. Thus, areas that are identified as non-urbanized under the 2010 Census but urbanized under the 2000 Census are still regulated areas. In short, the regulated UA cannot shrink and can only expand. The UA is subject to change every 10 years based on the application of the Census definition, thus a larger area may be covered in the future.

1.4 How to Use this Plan

For the purposes of the 2016 MS4 Permit and ease of use, the Town’s SWMP encompasses 3 separate written documents:

1. SWMP Plan (this document);
2. Illicit Discharge Detection and Elimination (IDDE) Plan; and
3. Operation and Maintenance (O&M) Plan.

This SWMP Plan is divided into several sections and includes the following components:

- Section 2** **Town Characteristics** – Section 2 provides an overview of relevant characteristics, focusing on those aspects related to stormwater runoff and the water quality of surface waters.
- Section 3** **MCM 1: Public Education and Outreach** – regulated operators of MS4s are required to implement a public education program. Section 3 discusses activities to comply with this measure.
- Section 4** **MCM 2: Public Participation and Involvement** – regulated MS4s are required to obtain public participation throughout the stormwater management program. Section 4 discusses activities to comply with this measure.
- Section 5** **MCM 3: Illicit Discharge, Detection, and Elimination** – regulated MS4s must develop and implement an illicit discharge detection and elimination program and develop a regulation to prohibit illicit discharges

to the storm drain system. Section 5 discusses activities to comply with this measure.

- Section 6** **MCM 4: Construction Site Stormwater Runoff Control** – regulated MS4s are required to implement and enforce a program to reduce pollutants in stormwater runoff from construction activities that disturb 1 or more acres. This requires the development of a local regulation requiring implementation of proper erosion and sediment controls. Permittees are also responsible for inspections and enforcement. Section 6 discusses activities to comply with this measure.
- Section 7** **MCM 5: Stormwater Management in New Development and Redevelopment** – regulated MS4s are required to develop and enforce a regulation requiring implementation of post-construction runoff controls at sites where construction activities disturb 1 or more acres. The controls must be designed to treat stormwater runoff from post-development sites and must be maintained over the long-term. Section 7 discusses activities to comply with this measure.
- Section 8** **MCM 6: Good Housekeeping and Pollution Prevention** – regulated MS4s must review their operations at specific facilities and those that occur throughout the Town (i.e., catch basin cleaning and street sweeping) and make improvements where needed to minimize pollution to stormwater runoff. Staff involved in these operations must also be trained on appropriate operations and maintenance techniques. Section 8 discusses activities to comply with this measure.
- Section 9** **TMDL and Impaired Waters Controls** – regulated MS4s are required to evaluate and address stormwater contributions to impaired waters. Section 9 discusses activities to comply with this measure.
- Section 10** **Annual Reporting** – Section 10 provides a summary of annual reporting requirements in order to meet the 2016 MS4 Permit.
- Section 11** **Implementation of Best Management Practices** – Section 11 provides a summary of BMPs outlined in Sections 3 through 9 in a concise plan for easy reference.

1.5 Program Responsibilities

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

Table 1-1. MS4 Responsible Personnel

Name	Title, Department	Contact
Tom Andrade	Town Engineer	(508) 760-6166 tandrade@town.dennis.ma.us

The Town of Dennis has 12 departments responsible for implementing portions of its MS4 program as identified in the NOI. Therefore, due to the extensive number of departments involved as part of the Town’s MS4 program, it is not feasible to list names and titles of responsible personnel for each one, as the information within this plan would be frequently out of date. However, **Table 1-2** provides a list of responsible departments and their general responsibilities within the MS4 program. The responsible person is the most senior person (e.g. department head, administrator, senior elected official, etc.) within each department listed below.

Table 1-2. Program Responsibilities

Department / Division	General Responsibilities
Board of Selectmen	Bylaw and regulation development;
Building Department	Website management; bylaw and regulation development; site plan review procedures; site inspections and procedures; as-built submittal; target properties to reduce impervious areas and for BMP retrofit; develop operation and maintenance procedures; inventory buildings and facilities
Conservation Commission	Site plan review procedures; site inspections and procedures; bylaw and regulation development; as-built submittal; target properties to reduce impervious areas and for BMP retrofit; TMDL and water quality limited requirements
Department of Natural Resources	Information distribution for public education; public participation
Department of Public Works	Website management; public participation; IDDE program implementation; IDDE training; develop operation and maintenance procedures; inventory buildings and facilities; SWPPP development and implementation; catch basin cleaning and street sweeping; road salt optimization program; BMP inspections and maintenance; vehicle operation and maintenance
Engineering Department	Website management; public participation; Sanitary Sewer Overflow (SSO) inventory; system mapping; IDDE program creation and implementation; IDDE training; site plan review procedures; site inspections and procedures; as-built submittal; regulation development; target properties to reduce impervious areas and for BMP retrofit; develop operation and maintenance procedures; inventory buildings and facilities; SWPPP development and implementation; BMP inspections and maintenance; TMDL and water quality limited requirements

Table 1-2 (continued). Program Responsibilities

Department / Division	General Responsibilities
GIS Department	System mapping
Health Department	Website management; public participation; SSO inventory; IDDE program creation and implementation; IDDE training; bylaw and regulation development
Information Technology	Social media participation; website management; public participation
Planning Department	Social media participation; website management; site plan review procedures; site inspections and procedures; bylaw and regulation development; as-built submittal; target properties to reduce impervious areas and for BMP retrofit; TMDL and water quality limited requirements
Recreation Department	Public participation; develop operation and maintenance procedures; inventory buildings and facilities
Town Clerk	Information distribution for public education

2 Town Characteristics

This section provides some background information on the Town of Dennis, Massachusetts, useful in understanding the Town’s characteristics and resources to develop a tailored Stormwater Management Plan. Town characteristics are described below.

2.1 Community Information

Dennis is a coastal community located near the center of Cape Cod, Massachusetts within Barnstable County, approximately 21 miles down the Mid-Cape Highway. It is generally bordered by the Cape Cod Bay to the north, the Nantucket Sound to the south, Yarmouth Massachusetts to the West, Harwich Massachusetts to the southeast, and Brewster MA to the northeast. The Bass River also separates Dennis and Yarmouth for roughly half of the town’s border, draining into the Nantucket Sound. Much of the Town, including the Town Center, lies within the Bass River watershed, with the Swan Pond River watershed in the southeast, and the Chase Garden Creek and Sesuit Harbor watersheds in the northwest and northeast, respectively. Select relevant community profile information is provided below:

- Total Area = 22.3 square miles (*source: Wikipedia*)
- 2010 Population = 14,221 (*source: EPA maps based on 2010 US Census*)
- Regulated Area Population = 14,108 (*source: EPA maps based on 2010 US Census*)

2.2 Demographics

Demographics play a role in developing a public education program that targets the appropriate audience through the most appropriate means. Information on owner occupancy versus rentals and languages spoken can help shape how information is disseminated. Of note, as per the 2010 US Census, about 50% of homes in Dennis are for seasonal, recreational, or occasional use. This implies significant population fluctuations throughout the year, and thus the public education and outreach program may need to be adjusted pending the public education program effectiveness evaluation outlined under Section 3.5.

2.3 Land Use

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

- | | | | |
|-----------------------------|-----|--------------------------------|-----|
| • Commercial | 3% | • Residential | 37% |
| • Forest | 32% | • Transportation and Utilities | 2% |
| • Industrial | 1% | • Wetlands | 16% |
| • Open Land and Agriculture | 4% | • Water | 5% |

As per the above, Dennis has substantial forest, open land, and water/wetland area (approximately 57%), with much of the remaining consisting of low-density residential development (approximately 37%). Remaining land use (approximately 6%) consists largely of roadways and commercial/industrial development.

2.4 303(d) Impaired Waterbodies

The ultimate goal of this Stormwater Management Plan is to outline a program to effectively maintain the Town’s stormwater infrastructure and to improve the water quality of receiving waters (waters which receive stormwater discharges from the MS4) in compliance with the 2016 MS4 Permit. 303(d) impaired waters are those surface waters identified by the MassDEP as priority waters that do not meet water quality criteria. As part of the 2016 MS4 Permit, communities must implement BMPs to address all 303(d) waters and specifically address those that have a completed TMDL study. **Table 2-1** lists the “impaired waters” partially or wholly located within the boundaries of Dennis’ regulated area based on the Final 2016 Massachusetts Integrated List of Waters produced by MassDEP every 2 years¹. These waters are shown in **Figure 2-3**. Dennis will review changes as new lists are published and update this plan as required.

Table 2-1. Impaired Waters

Waterbody Name	Segment ID and Category		Impairment(s)	Approved TMDL ²
Chase Garden Creek	MA96-35	4a	Fecal Coliform	36771
	MA96-103	5	Escherichia coli	
Quivett Creek	MA96-09	4a	Fecal Coliform	36771
Sesuit Creek	MA96-13	4a	Fecal Coliform	36771
Bass River	MA96-12	5	Estuarine Bioassessments	
			Fecal Coliform	36771
Swan Pond River	MA96-12	5	Estuarine Bioassessments	
			Fecal Coliform	36771

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

Category 5 Waters – impaired waters that require a TMDL.

Dennis is meeting the requirements for TMDL or water quality limited waterbodies related to bacteria as outlined further in **Section 9**. Note that the nitrogen TMDLs for Bass River and Swan River were released in May 2017 which is after the MS4 permit issuance date of April 4, 2016. In addition, the Bass River and Swan River are listed specifically as impaired for estuarine bioassessments rather than nitrogen in the final 2016 303(d) list. For this reason, Dennis is not specifically listed by name in the permit as having to meet TMDL or water quality limited waterbody requirements for nitrogen in either Appendix F or Appendix H for these waterbodies. Although it is expected that the source of the estuarine bioassessments impairment for these waterbodies is excess nitrogen loads (which would then require the Town meet the requirements of Part I of Appendix H), Part I of Appendix H states that permittees may be relieved of meeting these requirements if an EPA approved TMDL indicates that no additional stormwater controls for the control of nitrogen are necessary for the permittee's discharge based on wasteload allocations as part of the approved TMDL. The TMDLs for these waterbodies released in 2017 indicate that approximately 75% of nitrogen loading originates from wastewater, with only small

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

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

amounts originating due to stormwater runoff. TMDLs thus do not require implementing additional nitrogen controls, and instead require permittees to meet the requirements of the MS4 permit. Therefore, Dennis will meet the requirements of Part A.IV of Appendix F for waterbodies with a Cape Cod nitrogen TMDL, even though the TMDLs were finalized after the April 4, 2016 MS4 Permit issue date.

2.5 Measures to Protect Surface Drinking Water Supplies

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

2.6 Endangered Species Act Determination

In order to be eligible to discharge stormwater under the 2016 MS4 Permit, the Town of Dennis must certify that its stormwater system is not impacting federally listed rare or endangered species habitat or other critical environmental locations. Dennis partnered with other Cape Cod communities to complete this requirement in the summer of 2018 and met “Criterion B” on the Notice of Intent with the results documented in **Appendix A**. The Northern Long-eared Bat (*Myotis septentrionalis*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Roseate Tern (*Sterna dougallii dougallii*), Plymouth Redbelly Turtle (*Pseudemys rubriventris bangsi*), Northeastern Beach Tiger Beetle (*Cicindela dorsalis dorsalis*), Rusty Patched Bumble Bee (*Bombus affinis*), and Sandplain Gerardia (*Agalinis acuta*) were the only species identified as potentially being present within Dennis’ regulated area. No critical habitats were identified.

2.7 National Historic Preservation Act Determination

Regulated MS4s must also evaluate whether its discharges have the potential to affect historic properties. The MS4 Permit typically authorizes discharges from existing facilities and requires control of the pollutants discharged from the facility, however, EPA does not anticipate effects on historic properties from the pollutants in the authorized discharges. Thus, to the extent EPA’s issuance of the MS4 General Permit authorizes discharges of such constituents, confined to existing channels, outfalls or natural drainage areas, the permitting action does not have the potential to cause effects on historical properties. If there have been no relevant changes in operation of the MS4 since the 2003 MS4 General Permit, the discharge can still be considered to have no potential to have an effect on historic properties. This has been documented as “Criterion A” on the Notice of Intent (**Appendix A**) and thus no additional information is required for documentation.

Where there is disturbance of land through the construction and/or installation of control measures, there is a possibility that artifacts, records, or remains associated with historic properties could be impacted. In these cases, such as during future construction of structural stormwater BMPs, the Town will need to ensure that historic properties will not be impacted by their activities, or that they are in compliance with a written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other tribal representative that outlines all measures the applicant will carry out to mitigate or prevent any adverse effects on historic properties. This will be completed as required during a later date(s).

3 MCM 1: Public Education and Outreach

3.1 Summary of Permit Requirements

3.1.1 Core Permit Requirements

Under MCM 1, permittees must develop an educational program, define educational goals, express specific messages, define the targeted audience for each message, and identify responsible parties for program implementation. At a minimum, the program must provide information concerning the impact of stormwater discharges on water bodies within the community, especially those waters that are impaired or identified as priority waters. The program must identify steps and/or activities that the public can take to reduce the pollutants in stormwater runoff and their impacts to the environment.

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

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

At least 2 educational messages must be distributed to audiences over the permit term spaced at least a year apart. See sections below for more information.

3.1.2 TMDL & Impaired Waters Requirements

Public education and outreach programs must also address impaired waterbodies or those identified as priority waters outlined in **Table 3-1**. In Dennis, the only waterbody impairments listed as having specific requirements under the 2016 M4 Permit are bacteria and estuarine bioassessments, since the cause for the estuarine bioassessment impairments is excess nitrogen loading. Thus, priority waterbodies and impairments can be found in **Table 3-1**.

Table 3-1. Priority Waterbodies

Waterbody Name	Impairment(s)
Chase Garden Creek	Fecal Coliform, Escherichia coli
Quivett Creek	Fecal Coliform
Sesuit Creek	Fecal Coliform
Bass River	Estuarine Bioassessments (Nitrogen), Fecal Coliform
Swan Pond River	Estuarine Bioassessments (Nitrogen), Fecal Coliform

Relevant public information on nitrogen and bacteria topics as outlined by the 2016 MS4 Permit will be included with each of the 4 applicable target audiences as outlined below.

3.2 Objectives and Goals

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

3.3 Public Education Program

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

3.3.1 Residential

Informational Topics

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

- Effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers) on water quality;
- Benefits of appropriate on-site infiltration of stormwater;
- Effects of automotive work and car washing on water quality;
- Proper disposal of swimming pool water;
- Proper management of pet waste; and
- Maintenance of septic systems.

As required for waterbodies subject to the Cape Cod nitrogen TMDLs, the Town supplements its Residential program with the following annual messages encouraging:

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

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

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

Educational Message and Methods of Distribution

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

Table 3-2. BMP Description – Residential Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-1:</u> Residential Education Program	Stormwater flyers and brochures	Distribute literature with off-road and shellfish permits and with pet registrations and renewals	Department of Natural Resources, Town Clerk	Provide applicable information with all permits, applications, and renewals
	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites to include relevant stormwater information
	Social Media Outreach	Provide relevant stormwater information to different audiences via various social media platforms, as well as through the town blog	Planning Department, Information Technology	Follow statewide “Think Blue” campaign on social media platforms. Continue to maintain weblog with updated stormwater information

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

Table 3-3. Residential Public Outreach Topics and Message

	Pet Waste Fact Sheet	Social Media	Stormwater Webpage
Topics and Educational Message			
Core Program Topics			
Effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers) on water quality		X	X
Benefits of appropriate on-site infiltration of stormwater		X	X
Effects of automotive work and car washing on water quality		X	X
Proper disposal of swimming pool water;		X	X
Proper management of pet waste	X	X	X
Maintenance of septic systems		X	X
Nitrogen TMDL Topics			
Spring (March/April): encourage proper use and disposal of grass clippings and use of slow-release fertilizers		X	X
Summer (June/July): encourage proper management of pet waste	X	X	X
Fall (August/September/October): encourage the proper disposal of leaf litter		X	X
Bacteria TMDL Topics			
An annual message encouraging the proper management of pet waste, including noting any existing bylaws where appropriate	X	X	X
Disseminate educational materials to dog owners at the time of issuance or renewal of a dog license	X	X	X
Describe detrimental impacts of improper pet waste management, requirements for waste collection and disposal, and penalties for non-compliance	X	X	X
Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens		X	X

Schedule

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

3.3.2 Businesses, Institutions, and Commercial Facilities

Informational Topics

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

- Proper lawn maintenance (use of pesticides, herbicides and fertilizer);
- Benefits of appropriate on-site infiltration of stormwater;
- Building maintenance and storage of materials;
- Proper use and storage of salt or other de-icing and anti-icing materials;
- Proper management of waste materials and dumpsters;
- Proper management of parking lot surfaces;
- Proper car care activities; and
- Proper disposal of swimming pool water by entities such as motels, hotels, and health and country clubs.

As required for waterbodies subject to the Cape Cod nitrogen TMDLs, the Town supplements its Business, Institutions, and Commercial program with the following annual messages encouraging:

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

Educational Message and Methods of Distribution

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

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

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
BMP 1-2: Businesses, Institutions, and Commercial Education Program	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites to include relevant stormwater information

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

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-2:</u> Businesses, Institutions, and Commercial Education Program	Social Media Outreach	Provide relevant stormwater information to different audiences via various social media platforms, as well as through the town blog	Planning Department, Information Technology	Follow statewide “Think Blue” campaign on social media platforms. Continue to maintain weblog with updated stormwater information

Schedule

Information pertaining to the Business, Institutions, and Commercial public education and outreach program is made available continuously on the website and via social media. Because of the TMDL requirements, pet waste fact sheets also target the Business, Institutions, and Commercial audience.

3.3.3 Developers and Construction

Informational Topics

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

- Proper sediment and erosion control management practices;
- Information about Low Impact Development (LID) principles and technologies; and
- Information about EPA’s construction general permit (CGP).

Educational Message and Methods of Distribution

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

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

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-3:</u> Developers and Construction Education Program	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites to include relevant stormwater information

Table 3-4 (continued). BMP Description – Developers and Construction Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-3:</u> Developers and Construction Education Program	Social Media Outreach	Provide relevant stormwater information to different audiences via various social media platforms, as well as through the town blog	Planning Department, Information Technology	Follow statewide “Think Blue” campaign on social media platforms. Continue to maintain weblog with updated stormwater information

Schedule

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

3.3.4 Industrial

Informational Topics

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

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

Educational Message and Methods of Distribution

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

Table 3-6. BMP Description – Industrial Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
<u>BMP 1-4:</u> Industrial Education Program	Stormwater webpage	Provide relevant information and links for viewing and/or download from Town webpage	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites to include relevant stormwater information

Table 3-5 (continued). BMP Description – Industrial Outreach

BMP Description	Message	Method of Distribution	Responsible Parties	Measurable Goal
BMP 1-4: Industrial Education Program	Social Media Outreach	Provide relevant stormwater information to different audiences via various social media platforms, as well as through the town blog	Planning Department, Information Technology	Follow statewide “Think Blue” campaign on social media platforms. Continue to maintain weblog with updated stormwater information

Schedule

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

3.4 Measuring Public Education Program Effectiveness

During completion of the Town’s annual report as detailed further under **Section 10**, Dennis will review the effectiveness of each message and the Town’s overall education program. Effectiveness is expected to vary by message, however will generally be measured based on quantities of materials distributed and feedback from town employees based on observations in their area of work. Educational messages and/or distribution techniques will be modified as needed, should program managers determine that they are ineffective.

4 MCM 2: Public Participation & Involvement

4.1 Summary of Permit Requirements

Under MCM 2, permittees must provide annual opportunities for public participation in the review and implementation of the Town’s SWMP as part of a public education and involvement program. All public involvement activities must comply with state public notice requirements. The SWMP and annual reports must also be made available so that the public has opportunities to review and comment.

4.2 Objectives and Goals

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

4.3 Public Participation and Involvement Opportunities

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

4.3.1 Make Documents Publicly Available for Comment

Dennis makes this written SWMP Plan and annual reports available for review and comment via the Town’s website, along with the name, email address and/or phone number of a contact person from the Town government to request additional information or submit comments. This allows the public to comment on the program at least once per year. An updated SWMP Plan is posted to the website annually as additional tasks are completed. The following table shows the BMP, responsible parties and measurable goals.

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

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

4.3.2 Hold Watershed Improvement Events

The Town supports various cleanup events, focusing on conservation areas and Town beaches, to pick up trash and other materials there. Currently, beaches are cleaned bi-annually. The following table shows the BMP, responsible parties and measurable goals.

Table 4-2. BMP Description – Hold Watershed Improvement Events

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-2:</u> Coastal Cleanups	Recreation Department, Department of Public Works, Department of Natural Resources	Continue to sponsor bi-annual volunteer cleanups of all town beaches in the spring and fall.

4.3.3 Household Hazardous Waste Collection

The Town of Dennis sponsors up to 3 household hazardous waste collection days a year to encourage the proper disposal of hazardous materials by its residents.

Table 4-3. BMP Description - Household Hazardous Waste Collection

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 2-3:</u> Sponsor Household Hazardous Waste Event	Health Department, Department of Public Works	Continue annual household hazardous waste collection event.

5 MCM 3: Illicit Discharge, Detection, and Elimination

5.1 Summary of Permit Requirements

Under MCM 3, permittees must implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. A summary of the required IDDE activities and timelines are provided below. See sections below for more information.

5.1.1 Legal Authority

The IDDE program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to prohibit, investigate, and eliminate illicit discharges. For permittees authorized by the MS4-2003 permit such as Dennis, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.

5.1.2 Sanitary Sewer Overflow

Regulated communities must identify all known locations where SSOs have discharged to the MS4 during the previous 5-years and update it annually. Upon detection of an SSO, the permittee must eliminate it as quickly as possible and take interim mitigation measures to minimize or eliminate the discharge of pollutants until remediation work is complete.

5.1.3 System Mapping

Regulated communities must complete a comprehensive map of their stormwater system in 2 phases. Phase 1 must be completed within 2 years and include infrastructure such as outfalls and preliminary catchment delineations, waterbodies, open channel conveyances, interconnections with other MS4s, and structural stormwater BMPs. Phase 2 must be completed within 10 years and include information such as outfalls with high accuracy GPS location and refined catchment delineations, catch basins, manholes, pipe connectivity, and sanitary or combined sewer systems as available/applicable.

5.1.4 Illicit Discharge, Detection, and Elimination Program

The 2016 MS4 Permit requires preparation of a comprehensive written IDDE Program or IDDE Plan that provides detailed procedures for assessment and priority ranking of outfalls and interconnections, dry and wet weather outfall sampling, catchment investigation procedures, system vulnerability factor (SVF) assessment, identification of an illicit discharge, illicit discharge removal, and ongoing screening requirements. The written IDDE Program must be prepared as a standalone IDDE Plan separate from this SWMP Plan.

5.1.5 Annual IDDE Training

The 2016 MS4 Permit requires annual IDDE training to be provided to all employees involved in the IDDE program. Training must, at a minimum, include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program.

5.2 Objectives and Goals

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

5.3 IDDE Program

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

5.3.1 Establish Legal Authority

Requirements

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

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

Work to be Performed

The Town of Dennis adopted an Illicit Discharge Bylaw as Article 44 of the general bylaws on May 7, 2019 to meet IDDE regulatory mechanism requirements as required under the 2016 MS4 Permit. A copy of the bylaw is provided in **Appendix B**. This regulatory mechanism provides the Town of Dennis with adequate legal authority as required to comply with 2016 MS4 Permit requirements. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 3-1:</u> Enact and Enforce IDDE Bylaw	Board of Selectmen, Building Department, Health Department	Regulatory mechanism in place within 1 year of the permit effective date.

5.3.2 Complete System Mapping

Requirements

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

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

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

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

Work to be Performed

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

Table 5-2. BMP Description – Complete System Mapping

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

5.3.3 Complete Sanitary Sewer Overflow Inventory

Requirements

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

Work to be Performed

The Town of Dennis completed an inventory of SSOs that have discharged to the MS4 within the 5 years prior to submitting the Year 1 Annual Report to EPA. The inventory is also included in the IDDE Plan, including the status of mitigation and corrective measures to address each identified SSO. The inventory will be updated annually as necessary to as part of the Town’s annual report submittal to EPA in September of each year. The following table shows the BMP, responsible parties and measurable goals.

Table 5-3. BMP Description – Generate SSO Inventory

BMP Description	Responsible Parties	Measurable Goal
BMP 3-4: Complete SSO Inventory	Engineering Department, Health Department	Develop SSO inventory and complete within 1 year of effective date of permit

5.3.4 Develop and Implement Written IDDE Program

Requirements

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

- Assessment and priority ranking of outfalls and interconnections;
- Dry and wet weather outfall sampling;
- Catchment investigation procedures;
- System vulnerability factor (SVF) assessment;
- Identification of an illicit discharge;
- Illicit discharge removal; and
- Ongoing screening requirements.

Work to be Performed

Dennis has developed a written IDDE Plan as a separate standalone document to address the illicit discharge requirements of the 2016 MS4 Permit. Dennis is working towards implementing a comprehensive IDDE Plan and program, according to the schedule set forth

in the permit. The following table shows the BMPs, responsible parties and measurable goals.

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

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

5.3.5 Perform Dry and Wet Weather Outfall Screening

Requirements

Outfalls and contributing catchment areas must be categorized into Problem, High, Low, and Excluded outfalls and then ranked within each category. The 2016 MS4 Permit then requires all outfalls classified as High and Low to be inspected for the presence of dry conditions within 3 years of the permit effective date. While completing screening, permittees must also document various physical indicators of the outfall and sample flowing outfalls. Additionally, outfalls with at least 1 SVF must also be sampled during wet weather. Depending on the results, additional screening and sampling may be required further up into the contributing catchment. Once dry and wet weather sampling is complete, additional ongoing screening shall be performed once every 5 years in accordance with the catchment prioritization and ranking. Both dry and wet weather outfall screening must be conducted in accordance with screening procedures outlined in the written IDDE Plan. All sampling results shall be reported in the permittee’s annual report.

Work to be Performed

Dennis developed an outfall sampling program under the IDDE Plan which is being implemented moving forward according to the schedule outlined in the 2016 MS4 Permit. This includes dry and wet weather screening on Town outfalls, including those with SVFs where applicable. Known outfalls were evaluated during dry weather conditions during 2020 and 2021 and none of the sampling data collected from flowing outfalls met the Permit criteria as being highly likely to contain illicit discharges from sanitary sources. Results are documented in the IDDE Plan.

Wet weather screening on Town outfalls, including those with SVFs, will be completed at a later date where applicable. The program will be performed in accordance with the written

procedures and schedules in the IDDE Plan. Ongoing screening will also be performed after the conclusion of the initial sampling rounds. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 3-8:</u> Dry Weather Screening	Department of Public Works, Engineering Department, Health Department	Complete in accordance with outfall screening procedure within 3 years of the effective permit date
<u>BMP 3-9:</u> Wet Weather Screening	Department of Public Works, Engineering Department, Health Department	Complete in accordance with outfall screening procedure within 10 years of the effective permit date
<u>BMP 3-10:</u> Ongoing Screening	Department of Public Works, Engineering Department, Health Department	Conduct ongoing dry and wet weather outfall screening upon completion of the IDDE program

5.3.6 Perform Annual IDDE Training

The 2016 MS4 Permit requires annual IDDE training to be provided to all employees involved in the IDDE program. Therefore, Dennis provides annual training that at a minimum includes information on how to identify illicit discharges and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. The Department of Public Works, Engineering Department, and Health Department are the sole municipal departments responsible for implementing the IDDE program, and thus training focuses on these departments. Frequency and type(s) of training will be included in the annual report. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 3-11:</u> Perform IDDE Training	Department of Public Works, Engineering Department, Health Department	Complete annual training

5.4 Measuring IDDE Program Effectiveness

The success of the IDDE Program is evaluated according to the following parameters:

- Storm system mapping progress;
- Number of SSOs and illicit discharges identified and removed;
- Number and percent of total outfall catchments served by the MS4 evaluated using the catchment investigation procedures;
- Updated SVF and catchment inventory and ranking;
- Dry weather and wet weather screening and sampling results;

- Estimated volume or quantity of sewage removed; and
- Number of employees successfully trained on IDDE.

The above are tracked throughout the year and reported as part of each annual report submitted to EPA each year by September 28.

6 MCM 4: Construction Site Stormwater Runoff Control

6.1 Summary of Permit Requirements

Under MCM 4, permittees are required to implement and enforce a program to reduce pollutants in stormwater runoff discharged to the MS4 from all construction activities that result in a land disturbance of greater than or equal to 1 acre within the regulated area. This program shall also regulate disturbances less than 1 acre if they are part of a larger common plan of development or sale that would disturb 1 or more acres. A summary of the required Construction Site Stormwater Runoff Control Program activities and timelines are provided below:

6.1.1 Legal Authority

The Construction Site Stormwater Runoff Control Program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to:

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

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

6.1.2 Construction Site Stormwater Runoff Control Program

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

6.2 Objectives and Goals

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

6.3 Construction Site Stormwater Runoff Control Program

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

6.3.1 Establish Legal Authority

Requirements

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

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

Work to be Performed

The Town of Dennis previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations which in part require the use of soil erosion and sediment controls to stormwater runoff at construction sites, and also includes controls for other wastes at construction sites. The Town is currently in the process of revising its stormwater regulations to meet other permit requirements. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
BMP 4-1: Develop and Enforce Construction Bylaw	Board of Selectmen, Building Department	Complete bylaw within 1 year of the effective date of the permit

6.3.2 Establish Written Procedures for Site Plan Review

Requirements

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

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

Work to be Performed

The Town of Dennis previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations which in part provide written procedures for site plan review. Stormwater Management Plans must be supplied with accompanying

existing and proposed hydrology with supporting calculations, Operation and Maintenance Plan, and Sediment and Erosion Control Plan. Additionally, the Stormwater Management Plan must include accompanying plans showing relevant information, such as:

- Existing and proposed topography;
- Existing and proposed watershed boundaries, stormwater conveyances, impoundments, and receiving waterbodies;
- Proposed BMPs and measures for detention, retention, or infiltration of water;
- Locations, cross sections, profiles, and methods of stabilization of all linear waterbodies and features;
- Measures to ensure protection of water quality; and
- Structural details for drainage and stormwater components.

The Town is currently in the process of revising its stormwater regulations to meet other permit requirements. The following table shows the BMP, responsible parties and measurable goals.

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

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

6.3.3 Establish Procedures for Site Inspections and Enforcement

Requirements

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

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

Work to be Performed

The Town of Dennis previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations which in require site inspections and enforcement actions. The existing regulations meet most permit requirements; however,

additional minor changes are needed. The Town is currently in the process of revising its stormwater regulations to meet other permit requirements. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 4-3</u> : Develop Written Procedures for Site Inspections and Enforcement	Planning Department, Engineering Department, Conservation Commission, Building Department	Establish procedures for site inspections and enforcement within 1 year of the effective date of the permit

6.3.4 Establish a Sediment and Erosion Control Program

Requirements

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

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

Work to be Performed

The Town of Dennis previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations which in part require a Stormwater Permit for construction site operators performing land alterations. Permit requirements include the following measures:

- Minimize tree clearing and maintain existing vegetation to the extent practicable
- Install and maintain erosion control measures along the down gradient portion of the site
- Protect down gradient drainage structures
- Provide a stone construction entrance to minimize off-site tracking of sediment
- Stabilize steep slopes as necessary to control erosion

The Town is currently in the process of revising its stormwater regulations to meet other permit requirements. The following table shows the BMPs, responsible parties and measurable goals.

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

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

7 MCM 5: Stormwater Management in New Development and Redevelopment

7.1 Summary of Permit Requirements

Under MCM 5, permittees shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment sites that disturb 1 or more acres and discharge into an MS4 system. This program shall also regulate disturbances less than 1 acre if they are part of a larger common plan of development or sale that would disturb 1 or more acres. A summary of the required Stormwater Management in New Development and Redevelopment, also known as Post Construction Stormwater Management, activities and timelines are provided below:

7.1.1 Legal Authority

The Post Construction Stormwater Management Program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to:

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

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

7.1.2 As-Built Submittals

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

7.1.3 Operation and Maintenance

The program must include procedures to ensure adequate long-term operation and maintenance of BMPs are established after completion of a construction project, along with a dedicated funding source within 3 years of the effective permit date.

7.1.4 Regulatory Assessment

The permittee must complete an assessment of existing regulations that could affect creation of impervious cover to determine if changes are required to support LID. Additionally, the permittee must assess current regulations to ensure that certain green infrastructure is allowable where feasible. Any required changes must be completed within 4 years of the effective permit date.

7.1.5 Inventory of Potential Retrofit Sites

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

7.2 Objectives and Goals

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

7.3 Post-Construction Stormwater Management Program

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

7.3.1 Establish Legal Authority

Requirements

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

1. Use LID site planning and design strategies unless infeasible;
2. Stormwater management system designs shall be consistent with, or more stringent than, the requirements of the 2008 Massachusetts Stormwater Handbook, as amended;
3. Stormwater management systems on new development shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 60% of the average annual load of Total Phosphorus related to the total postconstruction impervious surface area on the site as calculated based on the average annual loading and not on the basis of any individual storm event.
 - a) Average annual pollutant removal requirements are achieved through one of the following methods:
 - 1) Installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved BMP design guidance or performance standards (e.g., State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance; or

- 2) Retaining the volume of runoff equivalent to, or greater than, one inch multiplied by the total post-construction impervious surface area on the new development site; or
 - 3) Meeting a combination of retention and treatment that achieves the above standards; or
 - 4) Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the new development site.
4. Stormwater management systems on redevelopment sites shall be designed to meet an average annual pollutant removal equivalent to 80% of the average annual postconstruction load of TSS related to the total post-construction impervious area on the site AND 50% of the average annual load of Total Phosphorus related to the total post-construction impervious surface area on the site as calculated based on the average annual loading and not on the basis of any individual storm event.
- b) Average annual pollutant removal requirements are achieved through one of the following methods:
 - 1) Installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved BMP design guidance or performance standards (e.g., State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance; or
 - 2) Retaining the volume of runoff equivalent to, or greater than, 0.8 inch multiplied by the total post-construction impervious surface area on the redeveloped site; or
 - 3) Meeting a combination of retention and treatment that achieves the above standards; or
 - 4) Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the redevelopment site.
 - c) Redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways, (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects) shall improve existing conditions unless infeasible are exempt from part a) above. Roadway widening or improvements that increase the amount of impervious area on the redevelopment site by greater than or equal to a single lane width shall meet the requirements of part a) above.

Additionally, the bylaw must include requirements for stormwater structural BMPs proposed as part of new or redevelopment to be optimized for nitrogen removal in order to meet TMDL requirements. See Section 9 for more information.

Work to be Performed

The Town of Dennis previously adopted a "Stormwater Management" bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction

projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations; however, regulations do not meet all 2016 MS4 Permit requirements. The Town is currently in the process of revising its stormwater regulations to meet all permit requirements to address nitrogen removal optimization for new development and redevelopment projects, among other requirements.. The following table shows the BMP, responsible parties, and measurable goals.

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

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

7.3.2 Require Submittal of As-Built Plans

The Town of Dennis previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations; however, regulations do not meet all 2016 MS4 Permit requirements. The Town is currently in the process of revising its stormwater regulations to meet all permit requirements to require submittal of as-built drawings. The following table shows the BMP, responsible parties, and measurable goals.

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

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

7.3.3 Require Long Term Operation and Maintenance

The Town of Dennis previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet and is provided under **Appendix B**. The town also previously adopted accompanying regulations; however, regulations do not meet all 2016 MS4 Permit requirements. The Town is currently in the process of revising its stormwater regulations to meet all permit requirements to develop procedures to ensure that the adequate long-term operation and maintenance of BMPs is accounted for at the conclusion of a construction project, along with a dedicated funding source. The following table shows the BMP, responsible parties, and measurable goals.

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

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

7.3.4 Complete Regulatory Assessment

Requirements

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

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

Work to be Performed

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

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

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

7.3.5 Complete Inventory of Potential BMP Retrofit Sites

Requirements

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

Additionally, retrofit opportunities must also consider the potential to reduce nitrogen discharges for properties within watersheds draining to nitrogen-impaired waterbodies. See Section 9 for more information.

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

Work to be Performed

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

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

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

8 MCM 6: Good Housekeeping and Pollution Prevention

8.1 Summary of Permit Requirements

Under MCM 6, permittees shall develop and implement an operations and maintenance program to reduce stormwater pollution from permittee activities. This includes optimizing existing activities related to parks and open space, buildings and facilities, vehicles and equipment, and stormwater infrastructure maintenance. A summary of the required Good Housekeeping and Pollution Prevention for Permittee Owned Operations activities and timelines is provided below.

8.1.1 Operations and Maintenance Programs

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

8.1.2 Stormwater Pollution Prevention Plans

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

8.2 Good Housekeeping and Pollution Prevention Program

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

8.2.1 Complete Facilities O&M Procedures

Requirements

The permittee must complete an inventory of all parks and open space, buildings and facilities where pollutants are exposed to stormwater runoff, including those coming from vehicles and equipment, within 2 years of the permit effective date. The inventory must be reviewed annually and updated as necessary. Upon completion, the permittee must establish written procedures as part of an Operation and Maintenance Plan within 2 years of the permit effective date for the following items:

Parks and Open Space

- Proper use, storage, and disposal of pesticides, herbicides, and fertilizers;
- Lawn maintenance and landscaping activities to protect water quality, such as reducing mowing, lawn clippings handling, and use of alternative materials;
- Pet waste handling collection and disposal locations at all locations where pets are permitted, including signage;
- Control of waterfowl in areas where they congregate to reduce waterfowl droppings from entering the MS4s;
- Management of trash containers; and
- Addressing erosion or poor vegetative cover, particularly near a surface waterbody.

Buildings and Facilities

- Use, storage, and disposal of petroleum products and other potential pollutants.
- Materials handling training to applicable employees;
- Ensuring that Spill Prevention, Control, and Countermeasures (SPCC) Plans are in place if needed (aboveground petroleum storage greater than 1,320 gallons or underground petroleum storage greater than 42,000 gallons);
- Dumpsters and other waste management equipment; and
- Sweeping parking lots and keeping facility areas clean to reduce pollutants in runoff.

Vehicles and Equipment

- Storage of vehicles to prevent fluid leaks to stormwater;
- Fueling area evaluation, including feasibility of fueling under cover; and
- Preventing vehicle wash waters from entering surface waters or the MS4.

Work to be Performed

The Town has prepared a comprehensive written O&M Plan, a standalone document separate from this SWMP Plan, that meets the above requirements. This document also includes the inventory of relevant Town-owned properties. In addition, the Town's O&M Plan established requirements for use of slow release fertilizers on permittee owned properties and establish procedures to manage grass cuttings and leaf litter on permittee property within areas of town draining to nitrogen-impaired waterbodies. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
BMP 6-1: Inventory open spaces, buildings and facilities, and vehicles and equipment	Engineering Department, Department of Public Works, Building Department, Recreation Department	Complete inventory of open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-2</u> : Establish Operation and Maintenance Procedures	Engineering Department, Department of Public Works, Building Department, Recreation Department	Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit
<u>BMP 6-3</u> : Vehicle Maintenance O&M	Department of Public Works	Maintain all vehicles indoors
<u>BMP 6-4</u> : Vehicle Washing O&M	Department of Public Works	Wash all vehicles indoors at facilities that drain to the combined sewer system

8.2.2 Complete Infrastructure O&M Procedures

Requirements

The permittee must establish written procedures as part of an Operation and Maintenance Plan within 2 years of the permit effective date to ensure that MS4 infrastructure is maintained in a timely manner to reduce the discharge of pollutants from the MS4 for the following items:

Street Sweeping (Appendix E)

- Sweeping all streets and permittee-owned parking lots, with the exception of rural uncurbed roads with no catch basins or high-speed limited access highways at least 1 per year in the spring following winter sanding events;
- More frequent sweeping of targeted areas based on inspections, land use, or known water quality impacts;
- Increasing street sweeping frequency of all municipal owned streets and parking lots to a minimum of 2 times per year; once in the spring (following winter activities such as sanding) and at least once in the fall (Sept 1 – Dec 1; following leaf fall) for areas within the nitrogen-impaired watersheds; and
- For rural uncurbed roadways with no catch basins or limited access highways, either an evaluation to meet the minimum frequencies above or development and implementation of an inspection, documentation, and targeted sweeping plan within 2 years of the effective date and submitted with the Year 1 annual report.

Catch Basin Cleaning (Appendix F)

- Prioritization of catch basins located near construction activities for more frequent inspection and maintenance;
- Establishing a schedule with a goal that at the time of maintenance, no catch basin is more than 50% full;
- For catch basins that are more than 50% full during 2 consecutive inspections or cleaning events, methods for investigating the contributing drainage area for sources of excessive sediment loads; and

- Establishing a plan for optimizing catch basin cleaning, inspections, and documentation.

Catch Basin and Street Sweeping Residuals Management

- Ensure proper storage of catch basins cleanings and street sweepings prior to disposal or reuse such that they will not be discharged to receiving waters based on available MassDEP policies.

Winter Operation and Maintenance

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

Work to be Performed

The Town recently updated its existing street sweeping, catch basin cleaning, and winter O&M procedures in order to meet permit requirements. Street sweeping will continue under the existing Street Sweeping Prioritization Plan provided in **Appendix E**. Catch basin prioritization will also continue according to the methodology and schedule outlined in the Catch Basin Optimization Plan provided in **Appendix F**. Results will be reviewed after each year to determine recommended next steps. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-5:</u> Review Infrastructure O&M Procedures	Engineering Department, Department of Public Works	Create written O&M Plan for stormwater infrastructure within 2 years of the effective date of the permit
<u>BMP 6-6:</u> Catch Basin Cleaning	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually
<u>BMP 6-7:</u> Street Sweeping	Department of Public Works	Sweep all streets and parking lots at least annually and sweep all streets within the Bass River and Swan River watersheds twice per year.
<u>BMP 6-8:</u> Road salt optimization program	Department of Public Works	Implement salt use optimization during winter maintenance operations

8.2.3 Stormwater Pollution Prevention Plans

Requirements

The permittee must establish written Stormwater Pollution Prevention Plans for the following permittee-owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater as determined by the permittee. SWPPPs must address a number of components, including the following:

- Pollution Prevention Team;
- Facility description, identification of potential pollutant sources, and identification of stormwater controls;
- Stormwater management practices, including measures to minimize or prevent exposure, good housekeeping and preventative maintenance, spill prevention and response, erosion and sediment control, management of runoff, salt storage, employee training, and control measure maintenance; and
- Procedures for site inspections and sampling.

Work to be Performed

The Town of Dennis has determined that no facilities meet the above requirements. An exemption memo has been prepared for the Dennis DPW Facility and Transfer Station as they do not require a SWPPP. The exemption memo is provided in **Appendix G**. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-9:</u> Assess regulated facilities to determine SWPPP eligibility	Engineering Department, Department of Public Works, Building Department	Complete facilities assessment within 2 years of the effective date of permit.
<u>BMP 6-10:</u> Develop SWPPPs for applicable facilities	Department of Public Works, Engineering Department, Health Department	Complete and implement within 2 years of the effective date of the permit

8.2.4 Structural Stormwater BMP Inspections

Requirements

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

Work to be Performed

The Town of Dennis completed an inventory (**Appendix H**) of known structural stormwater BMPs by the end of Year 2 as required by MCM 3, mapping requirements. The Town also

developed inspection and maintenance procedures for the various types of BMPs located within the Town’s regulated area. BMP inspection Standard Operating Procedures (SOPs) and results are tracked under the standalone O&M Plan under separate cover. The O&M Plan also provides logs for BMP inspection and maintenance. The following table shows the BMP, responsible parties and measurable goals.

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

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 6-11</u> : Establish BMP O&M Procedures	Engineering Department, Department of Public Works, Building Department, Recreation Department	Create written O&M Plan for stormwater BMPs within 2 years of the effective date of the permit
<u>BMP 6-12</u> : Inspect and maintain stormwater BMPs	Engineering Department, Department of Public Works	Inspect and maintain treatment structures annually

9 TMDL and Impaired Waters Controls

9.1 Permit Requirements

The 2016 MS4 Permit requires regulated operators of MS4s to determine whether stormwater discharges from their MS4 contribute to any impaired waterbodies, including those subject to an approved TMDL and certain water quality limited waterbodies. Water quality limited waters are any waterbodies that do not meet applicable water quality standards, including waterbodies listed in categories “4a” and “5” on the Massachusetts Integrated List of Waters, also known as the “303(d) List”. MassDEP is responsible for preparing TMDLs for many of these listed waters to identify the problem pollutant and establish water quality goals. TMDLs are prepared based on the priority assigned to the waterbody and are being completed over the course of several years.

As outlined in Section 2.3, the Town of Dennis is subject to the following TMDL requirements:

Table 9-1. TMDL and Impaired Waters Requirements

Waterbody Name	Impairment	2016 Permit Requirements
Chase Garden Creek	Fecal Coliform, Escherichia Coli	Appendix F, Part A.III Appendix H, Part III
Quivett Creek	Fecal Coliform	Appendix F, Part A.III
Sesuit Creek	Fecal Coliform	Appendix F, Part A.III
Bass River	Estuarine Bioassessments (Nitrogen)	Appendix F, Part A.IV
	Fecal Coliform	Appendix F, Part A.III
Swan River	Estuarine Bioassessments (Nitrogen)	Appendix F, Part A.IV
	Fecal Coliform	Appendix F, Part A.III

Thus, the Town of Dennis must implement control measures for discharges to approved TMDL waters as summarized in the sections below.

9.2 Cape Cod Nitrogen TMDL Requirements

The Town of Dennis is subject to the Cape Cod nitrogen TMDL and thus is required to implement the following requirements as outlined under Appendix F, Part A.IV of the 2016 Permit.

9.2.1 Additional or Enhanced BMPs

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

- **Public Education** – supplement its Residential and Business/Commercial/Institution programs with additional annual messages as follows:
 - Spring (April-May): Proper use and disposal of grass clippings and use of slow-release fertilizers;
 - Summer (June-July): Proper management of pet waste; and
 - Fall (August-October): Proper disposal of leaf litter.

- **Stormwater Management in New Development and Redevelopment** – supplement standard permit bylaw requirements to also mandate the use of stormwater BMPs optimized for nitrogen removal as part of new development and redevelopment projects. Additionally, retrofit opportunities must also consider the potential to reduce nitrogen discharges for properties within the Bass River and Swan River watersheds.

- **Good Housekeeping and Pollution Prevention** – establish requirements for reducing fertilizer usage and/or using slow release fertilizers on permittee owned properties, procedures for properly managing grass cuttings and leaf litter on permittee owned property, and prohibit blowing organic waste onto impervious surfaces. Additionally, street sweeping must be increased to at least twice per year, once in the spring and once in the fall.

Work to be Performed

Public education requirements have been incorporated into future public education outreach components as described in Section 3. Stormwater management in new and redevelopment will be addressed in the final stormwater regulations being established to meet construction and post-construction requirements. Good housekeeping and pollution prevention requirements have been incorporated into the Town’s O&M procedures.

Table 9-2. TMDL Requirements – Cape Cod Nitrogen Waterbodies

BMP Description	Responsible Parties	Measurable Goal
BMP 7-1: TMDL Requirements – Cape Cod Nitrogen	Engineering Department, Conservation Commission, Planning Department	Adhere to requirements in part A.IV of Appendix F

9.3 Fecal Coliform TMDL and E.coli Water Quality Limited Waterbodies Requirements

The Town of Dennis currently has 5 waterbodies as outlined in Table 9-1 with an approved TMDL for fecal coliform. Thus, the Town is required to implement the following requirements as outlined under Appendix F, Part III of the 2016 Permit.

9.3.1 Additional or Enhanced BMPs

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

- **Public Education** – supplement its Residential program with an annual message encouraging the proper management of pet waste and disseminate educational materials to dog owners at the time of issuance or renewal of a dog license. Education materials shall describe the detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance. The Town also must provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens.
- **Illicit Discharge, Detection, and Elimination** – designate catchments draining to bacteria or pathogen impaired segments as “Problem Catchments” or “High” priority.

Work to be Performed

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

Table 9-3. TMDL Requirements – Fecal Coliform

BMP Description	Responsible Parties	Measurable Goal
<u>BMP 7-2</u> : TMDL Requirements – Fecal Coliform	Engineering Department, Conservation Commission, Planning Department	Adhere to requirements in part A.III of Appendix F

10 Annual Reporting

The permittee shall submit annual reports each year of the permit term. The reporting period is a one-year period commencing on the permit effective date, and subsequent anniversaries thereof, except that the first annual report under this permit shall also cover the period from May 1, 2018 to the permit effective date. The annual report is due 90 days from the close of each reporting period, or by September 28 of each year. The annual reports must contain the following relevant information which should be tracked throughout the year, and should be filed within **Appendix I**:

- A self-assessment review of compliance with the permit terms and conditions.
- An assessment of the appropriateness of the selected BMPs.
- The status of any plans or activities, including:
 - Identification of all discharges determined to be causing or contributing to an exceedance of water quality standards and description of response;
 - For discharges subject to TMDL or water quality limited waterbody requirements, identification of BMPs used to address the impairment and assessment of the BMPs effectiveness;
 - For discharges to water quality limited waters a description of each BMP and any deliverables required.
- An assessment of the progress towards achieving the measurable goals and objectives of each of the 6 minimum measures:
 - Evaluation of the public education program including a description of the targeted messages for each audience; method and dates of distribution; methods used to evaluate the program; and any changes to the program.
 - Description of the activities used to promote public participation including documentation of compliance with state public notice regulations.
 - Description of IDDE activities including: status of mapping and results of the ranking and assessment; identification of problem catchments; status of all IDDE Plan components; number and identifier of catchments evaluated; number and identifier of outfalls screened; number of illicit discharges located and removed; gallons of flow removed; identification of tracking indicators and measures of progress; and employee training.
 - Evaluation of construction runoff management including number of project plans reviewed; number of inspections; and number of enforcement actions.
 - Evaluation of stormwater management for new and redevelopment including status of regulatory mechanism development; review and status of the street design and barriers to green infrastructure assessment; and inventory status.
 - Status of the O&M Programs.
 - Status of SWPPPs, including inspection results.
- All outfall screening and monitoring data during the reporting period and cumulative for the permit term; and a description of any additional monitoring data received by the permittee during the reporting period.
- Description of activities for the next reporting cycle.
- Description of any changes in identified BMPs or measurable goals.
- Description of activities undertaken by any entity contracted for achieving any measurable goal or implementing any control measure.

11 Implementation of Best Management Practices

The Town of Dennis' Best Management Practices Plan as outlined in the Town's NOI (**Appendix A**) is summarized in **Table 11-1**. For consistency with the 6 MCMs and impaired water requirements, the BMPs are broken down into 7 categories:

1. Public Education and Outreach;
2. Public Participation and Involvement;
3. Illicit Discharge Detection and Elimination;
4. Construction Site Stormwater Runoff Control;
5. Stormwater Management in New Development and Redevelopment;
6. Good Housekeeping and Pollution Prevention; and
7. TMDL and Water Quality Limited Waterbodies Controls

The BMP tables also outline the measurable goals for each BMP to gauge permit compliance, the responsible party(ies) for implementing each BMP, and an implementation schedule to be used throughout the permit period. In addition to the implementation activities outlined in this plan, the Town will also perform the following activities throughout the duration of the permit:

1. **Program Evaluation** – conduct annual evaluations of the Stormwater Management Program for compliance with permit conditions. The evaluation must include a determination of the appropriateness of the selected BMPs in efforts towards achieving the measurable goals outlined in **Table 11-1**.
2. **Record Keeping** – maintain records that pertain to the Stormwater Management Program for a period of at least 5 years. Records need to be made available to the public and the Town may charge a reasonable fee for copying. Records need not be submitted to EPA or MassDEP unless specifically requested.
3. **Reporting** – submit an annual report to EPA and MassDEP, including the information as noted in Section 10.

Refer to the following link for a copy of the 2016 MA MS4 Permit:

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

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Report Section	Year / Schedule					
						1	2	3	4	5	6
						7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24
1. Public Education and Outreach											
1-1	Residential Education Program	1. Distribute literature and pamphlets containing stormwater information and BMPs with off-road and shellfish permits.	Department of Natural Resources	Provide applicable information with all permits.	3.4.1	*	*	*	*	*	*
		2. Provide fact sheets on pet waste management with all dog registrations and renewals	Town Clerk	Provide information with all applications and renewals		*	*	*	*	*	*
		3. Provide relevant stormwater information to different audiences via social media.	Planning Department, Information Technology	Follow statewide "Think Blue" campaign on social media platforms.			*	*	*	*	*
		4. Provide comprehensive stormwater information on the Town's website, including effects of outdoor activities such as illicit storm drain dumping, private septic system and well maintenance, proper hazardous waste disposal, and use of detergents, fertilizers, etc., and use of environmentally friendly products.	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites		*	*	*	*	*	*
		5. Provide information through the town blog to maintain awareness of stormwater management.	Planning Department, Information Technology	Continue to maintain weblog with updated stormwater information.		*	*	*	*	*	*
1-2	Businesses, Institutions, and Commercial Education Program	1. Provide comprehensive stormwater information on the Town's website, including effects of outdoor activities such as lawn care on water quality; benefits of appropriate on-site infiltration of stormwater; building maintenance and storage of materials; proper use and storage of salt or other de-icing and anti-icing materials; proper management of waste materials and dumpsters; proper management of parking lot surfaces; proper car care activities; and proper disposal of swimming pool water by entities such as motels, hotels, and health and country clubs.	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites	3.4.2	*	*	*	*	*	*
		2. Provide relevant stormwater information to different audiences via social media.	Planning Department, Information Technology	Follow statewide "Think Blue" campaign on social media platforms.			*	*	*	*	*
		3. Provide information through the town blog to maintain awareness of stormwater management.	Planning Department, Information Technology	Continue to maintain weblog with updated stormwater information.		*	*	*	*	*	*
1-3	Developer and Construction Education Program	1. Provide relevant stormwater information to different audiences via social media.	Planning Department, Information Technology	Follow statewide "Think Blue" campaign on social media platforms.	3.4.3		*	*	*	*	*
		2. Provide comprehensive stormwater information on the Town's website, including proper sediment and erosion control management practices; information about Low Impact Development (LID) principles and technologies; and information about EPA's construction general permit (CGP).	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites		*	*	*	*	*	*
		3. Provide information through the town blog to maintain awareness of stormwater management.	Planning Department, Information Technology	Continue to maintain weblog with updated stormwater information.		*	*	*	*	*	*
1-4	Industrial Education Program	1. Provide comprehensive stormwater information on the Town's website, including equipment inspection and maintenance; proper storage of industrial materials; proper management and disposal of wastes; proper management of dumpsters; minimization of use and proper storage of salt or other de-icing/anti-icing materials; benefits of appropriate on-site infiltration of stormwater runoff from areas with low exposure to industrial materials such as roofs or employee parking; proper maintenance of parking lot surfaces; and information about EPA's CGP.	Engineering Department, Department of Public Works, Health Department, Information Technology	Continue to update and maintain the websites	3.4.4	*	*	*	*	*	*
		2. Provide information through the town blog to maintain awareness of stormwater management.	Planning Department, Information Technology	Continue to maintain weblog with updated stormwater information.		*	*	*	*	*	*
		3. Provide relevant stormwater information to different audiences via social media.	Planning Department, Information Technology	Follow statewide "Think Blue" campaign on social media platforms.			*	*	*	*	*

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Report Section	Year / Schedule					
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						7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24
2. Public Participation and Involvement											
2-1	Make SWMP Publicly Available	1. Post SWMP Plan on Town website, along with contact name, email address and/or phone number of a contact person at the Town to contact for information or submit comments.	Engineering Department, Department of Public Works, Information Technology	Annual review of stormwater management plan and posting on website. Allow public to comment on the plan at least annually	4.4.1	*	*	*	*	*	*
2-2	Coastal Cleanups	1. Hold bi-annual spring and fall cleanups of town beaches.	Recreation Department, Department of Public Works, Department of Natural Resources	Hold bi-annual spring and fall cleanup of town beaches.	4.4.2	*	*	*	*	*	*
2-3	Sponsor Household Hazardous Waste Event	1. Hold up to three household hazardous waste collection events a year.	Health Department, Department of Public Works	Allow public to drop off hazardous waste up to three times a year	4.4.3	*	*	*	*	*	*

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Report Section	Year / Schedule					
						1	2	3	4	5	6
						7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24
3. Illicit Discharge Detection and Elimination											
3-1	Enact and Enforce IDDE Bylaw	1. Enact and enforce IDDE bylaw	Board of Selectmen, Building Department, Health Department	Complete within 1 year of the effective date of permit	5.4.1	*					
3-2	Phase I Storm Sewer System Map	1. Delineate catchment areas based on topography for each MS4 outfall and map in GIS. 2. Update outfalls, conveyances receiving waters, interconnections, MS4-owned BMPs & initial catchment delineations.	Engineering Department, GIS Department	Updated map within 2 years of effective date of permit	5.4.2	*	*				
3-3	Phase II Storm Sewer System Map	1. Update outfall spatial location, pipes, manholes, catch basins, refined catchment delineations as new information becomes available.	Engineering Department, GIS Department	Updated map within 10 years of effective date of permit	5.4.2	*	*	*	*	*	*
3-4	Complete Sanitary SSO Inventory	1. Annually complete an inventory of Sanitary Sewer Overflows that discharged to the MS4 during the previous five years, including information on location, discharge characteristics, and corrective actions.	Engineering Department, Health Department	Develop SSO inventory and complete within 1 year of effective date.	5.4.3	*	*	*	*	*	*
3-5	Written IDDE Program	1. Prepare written IDDE Plan to include procedures on assessing and priority ranking outfalls and interconnections, dry and wet weather outfall sampling, catchment investigations, system vulnerability factor assessment, identification of an illicit discharge, illicit discharge removal, and ongoing screening requirements.	Engineering Department, Health Department	Complete within 1 year of the effective date of permit and update as required	5.4.4	*					
3-6	Outfall / Interconnection Inventory and Ranking	1. Develop an outfall and interconnection inventory that identifies each outfall and interconnection discharging from the MS4, records its location and condition and provides a framework for tracking inspections, screenings and other activities under the IDDE program. 2. Classify/rank outfalls. Initial ranking by end of Year 1. Update ranking annually with new information.	Engineering Department, Health Department	Identification of outfalls and initial ranking by July 1, 2019	5.4.4	*	*	*	*	*	*
3-7	Implement IDDE Program	1. Inspect key catchment structures (manholes, catch basins) during dry weather conditions. Where flowing water is observed, collect samples for analysis. 2. Inspect key catchment structures (manholes, catch basins) in all catchments during dry weather conditions. Where flowing water is observed, collect samples for analysis.	Department of Public Works, Engineering Department, Health Department	Implement catchment investigations according to program and permit conditions (Problem Outfalls by July 1, 2025, all outfalls by July 1, 2028)	5.4.4		*	*	*	*	*
3-8	Dry Weather Screening	1. Inspect drainage outfalls classified as High or Low priority during dry weather. 2. Investigate potential illicit discharges, if any. 3. Enforce removal of illicit discharges, if any.	Department of Public Works, Engineering Department, Health Department	Complete in accordance with outfall screening procedure and permit conditions by July 1, 2021	5.4.5	*	*	*	*	*	*
3-9	Wet Weather Screening	1. Sample select outfalls with System Vulnerability Factors under wet weather conditions. Sampling can be done upon completion of any dry weather investigation, but must be completed before catchment investigation is marked as complete.	Department of Public Works, Engineering Department, Health Department	Complete in accordance with outfall screening procedure within 10 years of the effective permit date	5.4.5						*
3-10	Ongoing Screening	1. Upon completion of catchment investigations, reprioritize outfalls for ongoing screening. 2. Continue performing dry and wet weather sampling according to the new prioritization at least once every 5 years.	Department of Public Works, Engineering Department, Health Department	Conduct ongoing dry and wet weather outfall screening upon completion of the IDDE program	5.4.5						*
3-11	Perform IDDE Training	1. Provide annual training to employees involved in the IDDE program.	Department of Public Works, Engineering Department, Health Department	Train applicable employees annually	5.4.6	*	*	*	*	*	*

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

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						7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24
4. Construction Site Stormwater Runoff Control											
4-1	Develop and Enforce Construction Bylaw	1. Review and update existing Stormwater Management bylaw to address control of other wastes at construction sites.	Board of Selectmen, Building Department	Complete bylaw updates within 1 year of the effective date of the permit	6.4.1	*					
4-2	Develop Written Procedures for Site Plan Review	1. Review and update existing requirements mandating site plan review and make changes as needed, such as incorporating additional information submitted by the public.	Planning Department, Engineering Department, Conservation Commission, Building Department	Establish procedures for site plan review within 1 year of the effective date of the permit	6.4.2	*					
4-3	Develop Written Procedures for Site Inspections and Enforcement	1. Review and update existing requirements mandating site inspections, enforcement, and requirements for submittal of monthly inspection reports as needed	Planning Department, Engineering Department, Conservation Commission, Building Department	Establish procedures for site inspections and enforcement within 1 year of the effective date of the permit	6.4.3	*					
4-4	Establish a Sediment and Erosion Control Program	1. Review existing requirements for development of an Erosion and Sediment Control Plan to determine if it meets all permit requirements and make changes as needed	Planning Department, Conservation Commission, Building Department	Establish procedures for development of an erosion and sediment control program within 1 year of the effective date of the permit	6.4.4	*					
4-5	Develop Procedures for Waste Control	1. Establish requirements to control construction site wastes within 1 year of the effective date of the permit	Planning Department, Conservation Commission, Building Department	Establish requirements to control construction site wastes within 1 year of the effective date of the permit	6.4.4	*					

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

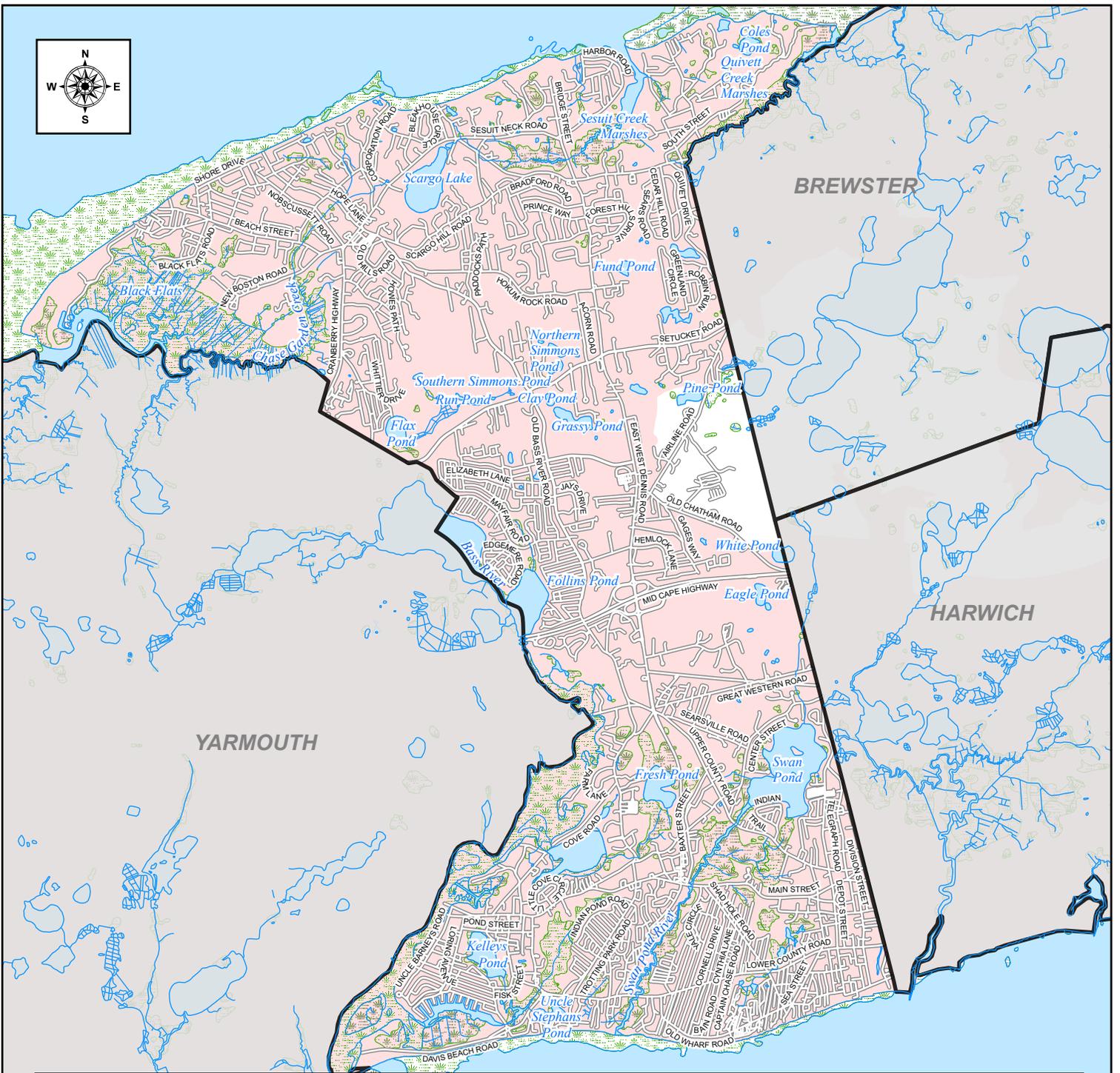
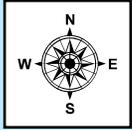
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						1	2	3	4	5	6
						7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24
5. Stormwater Management in New Development and Redevelopment											
5-1	Develop and Enforce Post-Construction Bylaw	1. Review existing Stormwater Management bylaw and incorporate specific design requirements outlined in the final permit regarding new development and redevelopment tied to the Massachusetts Stormwater Handbook. Include a requirement that stormwater management BMPs that ultimately discharge to a nitrogen impaired water body be optimized for nitrogen removal.	Board of Selectmen, Building Department	Complete bylaw updates within 2 years of the effective date of the permit	7.4.1	*	*				
5-2	Require Stormwater As-Built Plan Submittal	1. Review existing Stormwater Management for Discharges to Municipal Stormwater System bylaw and make changes as necessary to require submittal of as-built drawings.	Planning Department, Engineering Department, Conservation Commission, Building Department	Require submittal of as-built plans for completed projects within 2 years of completion	7.4.2	*	*				
5-3	Require Long Term Operation and Maintenance	1. Review existing Stormwater Management for Discharges to Municipal Stormwater System bylaw and make changes as necessary to require long term operation and maintenance, such as addressing funding sources.	Planning Department, Engineering Department, Conservation Commission, Building Department	Require submittal of operation and maintenance plans to ensure long term maintenance within 1 year of the effective date of the permit	7.4.3	*	*				
5-4	Street Design and Parking Lot Guidelines	1. Review existing by-laws, regulations and guidance pertaining to current street and parking lot design and all regulations for ability to incorporate LID into designs. 2. Prepare a report assessing whether existing street and parking lot design regulations allow for incorporation of LID practices and recommendations for changes.	Engineering Department, Planning Department, Conservation Commission, Building Department	Complete regulatory updates within 4 years of the effective date of the permit	7.4.4		*	*		*	
5-5	Allow Green Infrastructure	1. Review existing by-laws, regulations and guidance to determine the feasibility of making green practices allowable. 2. Prepare a report assessing existing local regulations to determine the feasibility of allowing green roofs, infiltration practices, and water harvesting devices.	Engineering Department, Planning Department, Conservation Commission, Building Department	Complete regulatory updates within 4 years of the effective date of the permit	7.4.4		*	*		*	
5-6	Target Properties to Reduce Impervious Area	1. Identify 5 properties for potential retrofits to stormwater impacts, as well as nitrogen impacts to Cape Cod. 2. Track and report annually properties that have been modified or retrofitted with BMPs.	Engineering Department, Planning Department, Conservation Commission, Building Department	Complete inventory within 4 years of the effective date of the permit and update annually on retrofitted properties	7.4.5				*	*	*
6. Good Housekeeping and Pollution Prevention											

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Report Section	Year / Schedule					
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						7/1/18-7/1/19	7/1/19-7/1/20	7/1/20-7/1/21	7/1/21-7/1/22	7/1/22-7/1/23	7/1/23-7/1/24
6-1	Inventory Open Spaces, Buildings and Facilities, and Vehicles and Equipment	1. Inventory all permittee-owned parks and open spaces, building and facilities (including storm drains), and vehicles and equipment in the regulated area.	Engineering Department, Department of Public Works, Building Department, Recreation Department	Complete inventory of open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit	8.3.1		*				
6-2	Establish Operation and Maintenance Procedures	1. Evaluate practices at MS4 properties (parks and open spaces, building and facilities, vehicles and equipment) and develop written Facilities O&M Plan.	Engineering Department, Department of Public Works, Building Department, Recreation Department	Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit	8.3.1		*				
		2. Distribute written O&M/SOPs as part of employee training.					*				
		3. Update inventory annually.					*	*	*	*	
		4. Ensure all vehicle maintenance and washing is performed indoors.				*	*	*	*	*	
6-3	Vehicle Maintenance O&M	1. Maintain vehicles indoors.	Department of Public Works	Maintain all vehicles indoors	8.3.1	*	*	*	*	*	*
6-4	Vehicle Washing O&M	1. Wash vehicles indoors in the enclosed wash bay.	Department of Public Works	Wash vehicles indoors	8.3.1	*	*	*	*	*	*
6-5	Review Infrastructure O&M Procedures	1. Develop written O&M procedures or SOPs for the storm drain system, roadways and existing Town-owned BMPs (e.g., catch basin cleaning, street sweeping, winter road maintenance, stormwater BMPs).	Engineering Department, Department of Public Works	Written SOPs.	8.3.2		*				
		2. Distribute written O&M/SOPs as part of employee training.					*				
6-6	Catch Basin Cleaning	1. Establish a cleaning schedule and maintain catch basins so that they remain less than 50% full of sediment.	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	8.3.2	As Needed					
		2. Properly manage storage of catch basin residuals.				*	*	*	*	*	*
6-7	Street Sweeping	1. Sweep streets once a year in spring and twice a year where drainage is to nitrogen impaired water.	Department of Public Works	Sweep all streets and parking lots at least annually and sweep all streets within the Cape Cod watershed twice	8.3.2	*	*	*	*	*	*
		2. Properly manage storage of street sweeping residuals.									
6-8	Road Salt Optimization Program	1. Establish and implement procedures for proper winter road maintenance, including use and storage of salt and sand, and procedures to minimize the use of road salt.	Department of Public Works	Implement salt use optimization during winter maintenance operations	8.3.2	*					
6-9	Assess Regulated Facilities to Determine SWPPP Eligibility	1. Evaluate the need for SWPPPs for municipal maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater.	Engineering Department, Department of Public Works, Building Department	Document whether a SWPPP is needed and where required, prepare SWPPP by July 1, 2020.	8.3.3		*				
6-10	Develop SWPPPs for Applicable Facilities	1. Complete SWPPP or document No Exposure as applicable.	Department of Public Works, Engineering Department, Health Department	Document whether a SWPPP is needed and where required, prepare SWPPP by July 1, 2020.	8.3.3		*				
6-11	Establish BMP O&M Procedures	1. Establish written inspection and maintenance procedures and frequencies for inspection of all structural stormwater BMPs.	Engineering Department, Department of Public Works, Building Department, Recreation Department	Create written O&M Plan for stormwater BMPs within 2 years of the effective date of the permit	8.3.4		*				
6-12	Inspect and Maintain Stormwater BMPs	1. Annually inspect MS4-owned stormwater treatment BMPs. Document inspections and maintenance performed.	Engineering Department, Department of Public Works	Inspect and maintain treatment structures annually	8.3.4		*	*	*	*	*

Table 11-1. Proposed BMP Plan - Implementation of Phase II Activities

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7. TMDL and Impaired Waters Controls											
7-1	Discharges to Approved TMDL Waterbodies - Nitrogen (Cape Cod - Bass River, Swan River)	<p>1. Enhanced BMPs - Public Education. Include fertilizer use, disposal of grass clippings and leaf litter, and pet waste management with the Residential and Commercial public education programs.</p> <p>2. Enhanced BMPs - Stormwater Management in New Development and Redevelopment. Include a requirement in the regulatory mechanism that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal.</p> <p>3. Enhanced BMPs - Consider BMPs to reduce nitrogen discharges when identifying MS4 properties for retrofits.</p> <p>4. Enhanced BMPs - Good Housekeeping and Pollution Prevention. Incorporate nitrogen reduction practices into Town good housekeeping practices such as fertilizer use and managing grass cuttings and leaf litter.</p> <p>5. Enhanced BMPs - Good Housekeeping and Pollution Prevention. Increase street sweeping to twice per year (spring and fall) for catchment areas that discharge to nitrogen-impaired waters.</p>	Engineering Department, Conservation Commission, Planning Department	<p>Distribute materials with Residential and Commercial education program.</p> <p>Complete bylaw updates within 2 years of the effective date of the permit</p> <p>Evaluate stormwater BMPs for nitrogen removal during facility inventory within 2 years of the effective date of the permit</p> <p>Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the effective date of the permit</p> <p>Sweep streets and parking lots twice per year.</p>	9.2.1	*	*	*	*	*	*
7-2	Discharges to Approved TMDL Waterbodies - Bacteria (see Table 9-1)	<p>1. Enhanced BMPs - Public Education. Include management of pet waste and septic system maintenance with the Residential public education program.</p> <p>2. Enhanced BMPs - Illicit Discharge, Detection, and Elimination. Designate catchment draining to bacteria/pathogen impaired segments as "Problem Catchments" or "High" priority catchments in IDDE ranking.</p>	Engineering Department, Conservation Commission, Planning Department	<p>Distribute materials with Residential education program.</p> <p>Complete initial ranking within 1 year of the effective date of the permit</p>	9.2.2	*	*	*	*	*	*



Legend

-  Urbanized Area
-  Stream, Brook
-  Lake, Pond, Reservoir
-  Wetland
-  Town Boundaries

**Figure 1-1.
Urbanized Area**

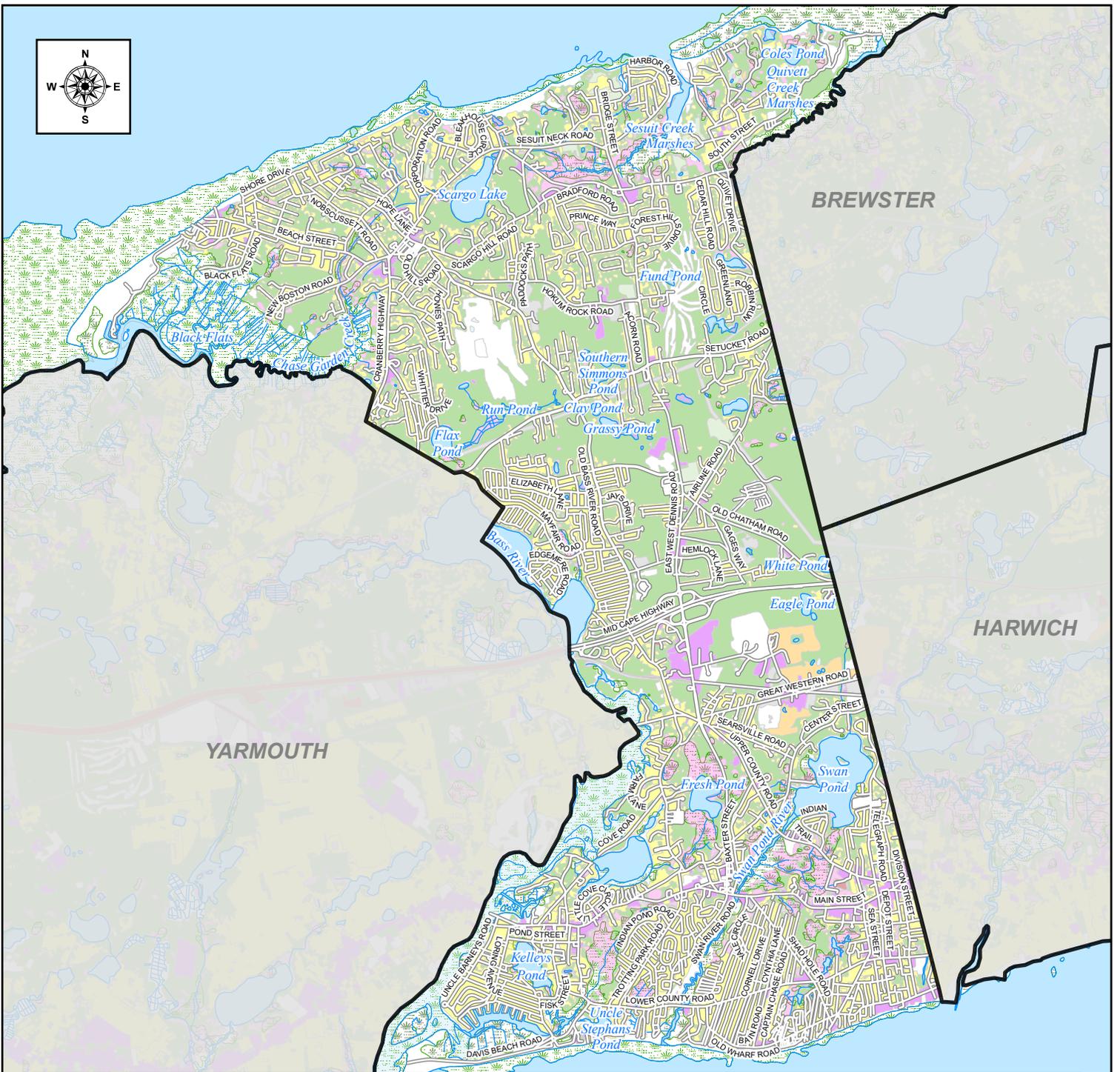
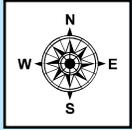
Dennis, MA



**Comprehensive
Environmental
Incorporated**



Data Source: MassGIS



Legend

-  Industrial
-  Transportation
-  Residential
-  Commercial
-  Agriculture
-  Forest
-  Water
-  Wetland
-  Disturbed Land
-  Other Cleared Land
-  Stream, Brook

**Figure 2-1.
Land Use**

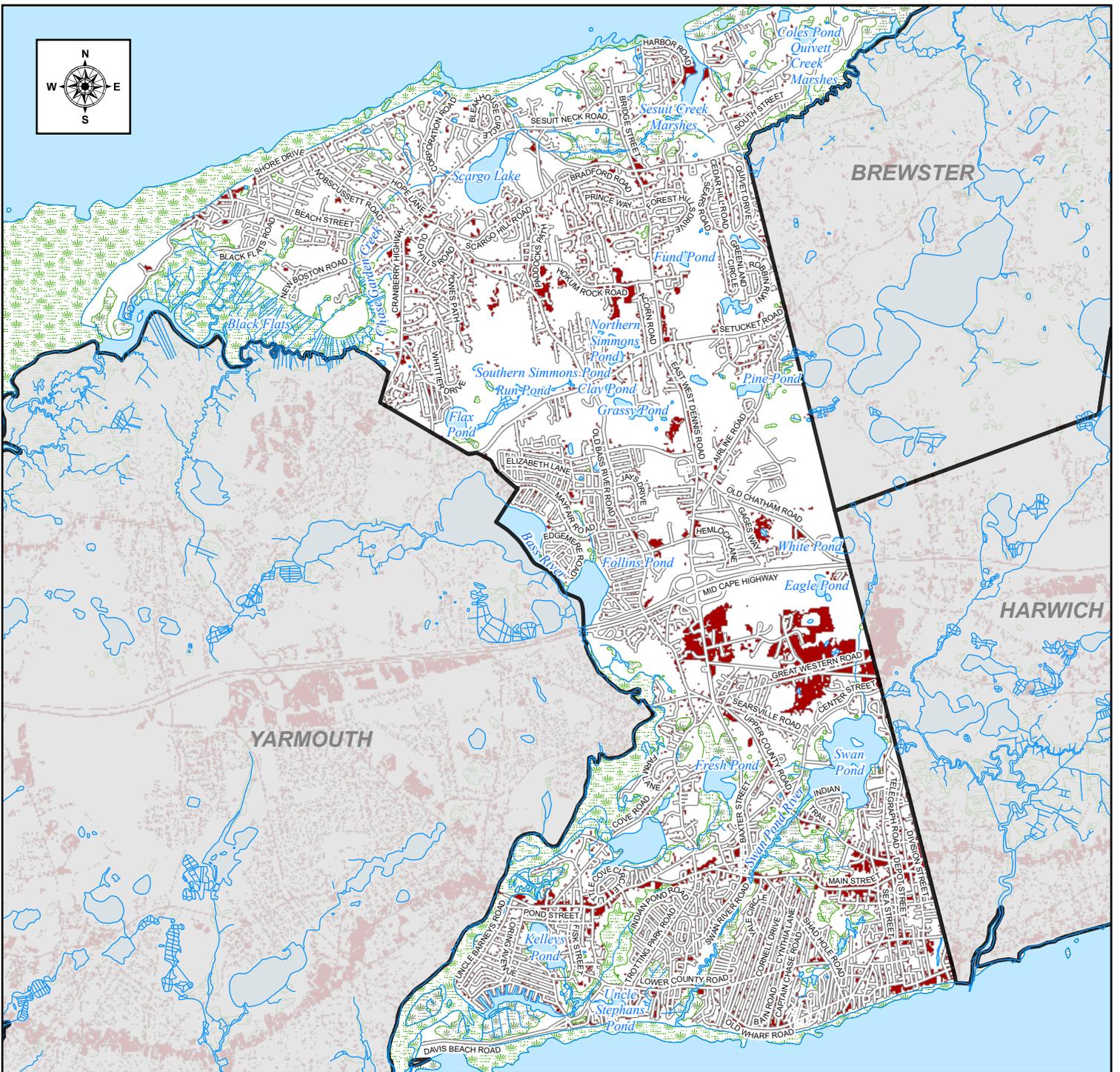
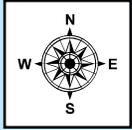
Dennis, MA



**Comprehensive
Environmental
Incorporated**



Data Source: MassGIS



Legend

-  Impervious Surface
-  Town Boundaries
-  Stream, Brook

**Figure 2-2.
Impervious Area**

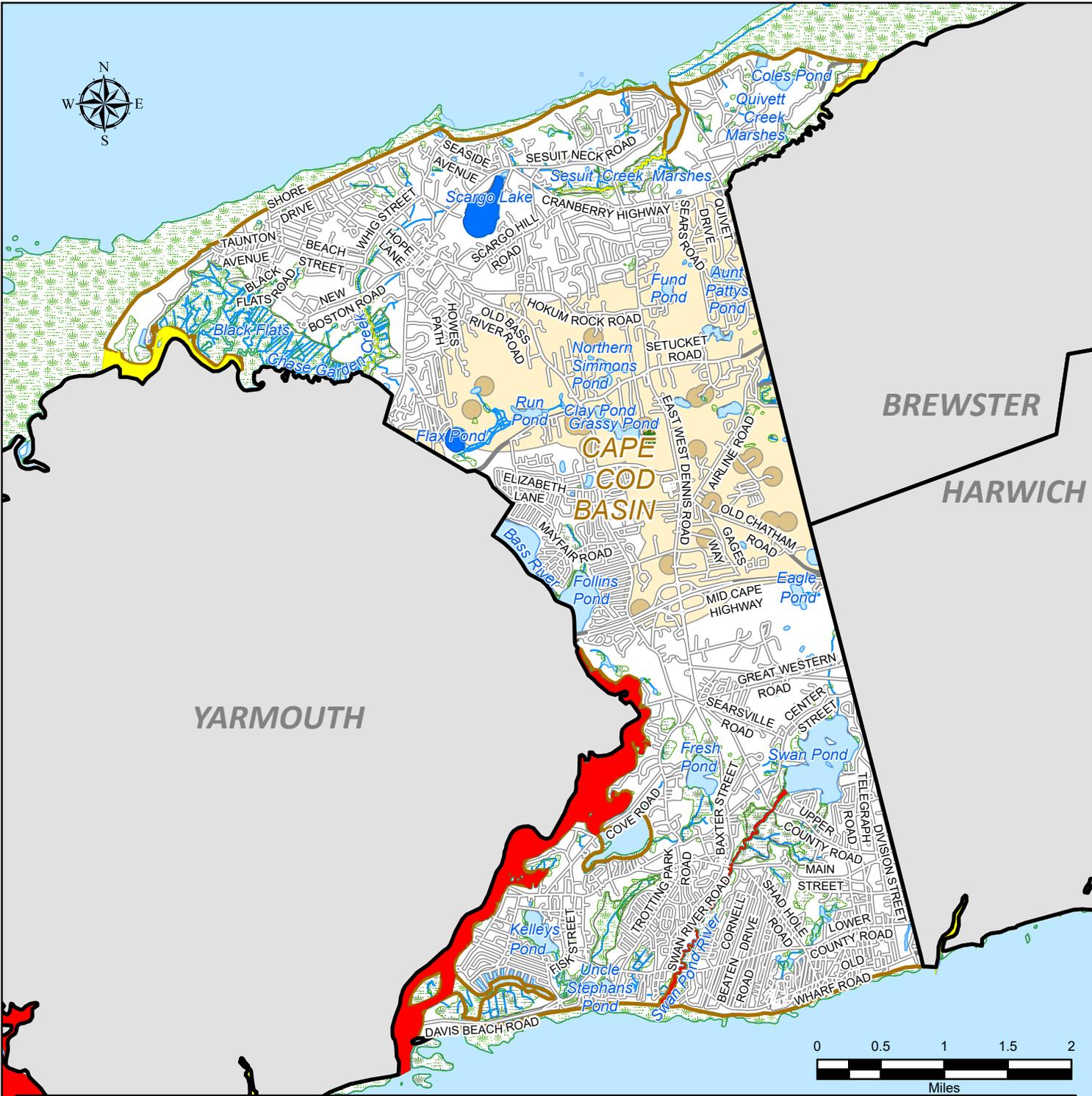
Dennis, MA



**Comprehensive
Environmental
Incorporated**



Data Source: MassGIS



Legend

- Certified Vernal Pool
- Major Watersheds
- Lake, Pond, Reservoir
- Wetland, Marsh, Swamp
- Stream, Brook
- MassDEP 303(d) Waters:**
- 2 - Attaining some uses; other uses not assessed
- 3 - No uses assessed
- 4A - Impaired - TMDL is completed
- 5 - Impaired - TMDL required
- MassDEP Zone I
- MassDEP Zone II

Resource Waters

Dennis, MA

Comprehensive Environmental Incorporated



Data Sources: CEI, MassGIS, Town of Dennis

Appendix A

Notice of Intent and Authorization to Discharge

Part I: General Conditions

General Information

Name of Municipality or Organization: Town of Dennis State: MA

EPA NPDES Permit Number (if applicable): MAR041103

Primary MS4 Program Manager Contact Information

Name: Thomas Andrade Title: Town Engineer

Street Address Line 1: 120 Theophilus F. Smith Road

Street Address Line 2:

City: South Dennis State: MA Zip Code: 02660

Email: tandrade@town.dennis.ma.us Phone Number: (508) 760-6166

Fax Number: (508) 760-6233

Other Information

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

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Yes

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

National Historic Preservation Act (NHPA) Determination Complete? Yes

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? 90% If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY): 06/30/20

Web address where MS4 map is published: https://www.mapsonline.net/dennisma/dennisstormwater.html

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? No Effective Date or Estimated Date of Adoption (MM/DD/YY): 06/30/19

Construction/Erosion and Sediment Control (ESC) Authority Adopted? Yes Effective Date or Estimated Date of Adoption (MM/DD/YY): 10/27/09

Post- Construction Stormwater Management Adopted? Yes Effective Date or Estimated Date of Adoption (MM/DD/YY): 10/27/09

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Unnamed tributary to Sesuit Harbor	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"/>	
Coles Pond Bog	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"/>	
Unnamed tributary to Quivett Creek	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"/>	
Aunt Pattys Pond	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Black Flats	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"/>	
Unnamed pond in Plashes Conservation Land	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"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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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 <small>(enter your own text to override the drop down menu)</small>	BMP Description	Targeted Audience	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Measurable Goal	Beginning Year of BMP Implementation
Brochures/Pamphlets	Distribute literature and pamphlets containing stormwater information and BMPs with off-road and shellfish permits.	Residents	Department of Natural Resources	Provide applicable information with all permits.	2018
Brochures/Pamphlets	Distribute pet waste fact sheets with dog registrations and renewals.	Residents	Town Clerk, Department of Natural Resources	Provide information with all applications and renewals.	2018
Brochures/Pamphlets	Distribute information on "Think Globally - Act Locally" for conservation activities.	Residents	Department of Natural Resources	Maintain brochures in town offices and educational kiosks at town conservation areas.	2018
Web Page	Provide information on website related to illicit storm drain dumping, private septic system and well maintenance, proper hazardous waste disposal, and use of detergents, fertilizers, etc., and use of environmentally friendly products.	Residents	Engineering Department, Department of Public Works, Health Dep	Continue to maintain and update webpages with relevant information, links, and BMPs.	2018

Web Page	Provide information on website related to illicit storm drain dumping, proper hazardous waste disposal, and use of detergents, fertilizers, etc., and use of environmentally friendly products.	Businesses, Institutions, and Commerce	Engineering Department, Department of Public Works, Health Dep	Continue to maintain and update webpages with relevant information, links, and BMPs.	2018
Web Page	Provide information on website related to erosion and sediment control, Low Impact Development, and the Construction General Permit.	Developers (construction)	Engineering Department, Planning Department, Building Departm	Continue to maintain and update webpages with relevant information, links, and BMPs.	2018
Web Page	Provide web information on equipment maintenance and inspection, material storage, solid waste handling, salt usage, benefits of onsite infiltration, management of parking lot surfaces, and EPA's MSGP.	Industrial	Engineering Department, Planning Department, Building Departm	Continue to maintain and update webpages with relevant information, links, and BMPs.	2018
Social Media	Provide information through the town blog to maintain awareness of stormwater management.	Residents, Businesses, Institutions, Commercial Facilities, Developers (construction), Industrial	Planning Department, Information Technology	Continue to maintain weblog with updated stormwater information.	2018
Social Media	Provide relevant stormwater information to different audiences via social media.	Residents, Businesses, Institutions, Commer	Planning Department, Information Technology	Follow statewide "Think Blue" campaign on social media platforms.	2019

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

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

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description <small>(enter your own text to override the drop down menu)</small>	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Additional Description/ Measurable Goal	Beginning Year of BMP Imple- mentation
Public Review	SWMP Review	Engineering Department, Department of Public Works, Information Technolog	Allow annual review of stormwater management plan and posting of stormwater management plan on website.	2018
Public Participation	Upload SWMP to the Town website and provide a link to contact info	Engineering Department, Department of Public Works, Information Technolog	Allow public to comment on stormwater management plan annually.	2018
Public Participation	Cleanups - Shoreline/Waterbody	Recreation Department, Department of Public Works, Department of Natural F	Hold bi-annual spring and fall cleanup of town beaches.	2018
Public Participation	Household haz. waste/used oil collection	Health Department, Department of Public Works	Provide up to three household hazardous waste collection days per year.	2018

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

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

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
SSO inventory	Develop SSO inventory in accordance of permit conditions	Engineering Department, Health Department	Complete within 1 year of effective date of permit	2018
Storm sewer system map	Create map and update during IDDE program completion	Engineering Department, GIS Department	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018
Written IDDE program	Create written IDDE program	Engineering Department, Health Department	Complete within 1 year of the effective date of permit and update as required	2018
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Department of Public Works, Engineering Department, Health Department	Complete 10 years after effective date of permit	2020
Employee training	Train employees on IDDE implementation	Department of Public Works, Engineering Department, Health Department	Train annually	2018
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Department of Public Works, Engineering Department, Health Department	Complete 3 years after effective date of permit	2019
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Department of Public Works, Engineering Department, Health Department	Complete 10 years after effective date of permit	2024
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Department of Public Works, Engineering Department, Health Department	Complete ongoing outfall screening upon completion of IDDE program	2028
IDDE Ordinance/Bylaw	Create and implement a new IDDE bylaw	Board of Selectmen, Building Department, Health Department	Complete within 1 year of the effective date of permit	2018

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	Planning Department, Engineering Department, Conservation Commission, Bu	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 Department, Engineering Department, Conservation Commission, Bu	Complete within 1 year of the effective date of permit	2018
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Planning Department, Conservation Commission, Building Department	Complete within 1 year of the effective date of permit	2018
Waste Control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Planning Department, Conservation Commission, Building Department	Complete within 1 year of the effective date of permit	2018
Stormwater Management Bylaw	Stormwater and erosion control rules and regulations in effect. Stormwater permits required.	Board of Selectmen, Building Department	Review policies and update as needed.	2018

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	Engineering Department, Planning Department, Conservation Commission, Bu	Require submission of as-built plans for completed projects	2018
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Engineering Department, Planning Department, Conservation Commission, Bu	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	Engineering Department, Planning Department, Conservation Commission, Bu	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.	Engineering Department, Planning Department, Conservation Commission, Bu	Complete 4 years after effective date of permit and implement recommendations of report	2020

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 <small>(enter your own text to override the drop down menu or entered text)</small>	BMP Description	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Measurable Goal <small>(all text can be overwritten)</small>	Beginning Year of BMP Implementation
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	Engineering Department, Department of Public Works, Building Dep	Complete and implement 2 years after effective date of permit	2019
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	Engineering Department, Department of Public Works, Building Dep	Complete 2 years after effective date of permit and implement annually	2019
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	Engineering Department, Department of Public Works	Complete 2 years after effective date of permit	2019
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	Engineering Department, Department of Public Works, Building Dep	Complete and implement 2 years after effective date of permit	2019
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018
Street sweeping program	Sweep all streets and permittee-owned parking lots in accordance with permit conditions	Department of Public Works	Sweep all streets and permittee-owned parking lots once per year in the spring	2018
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	Department of Public Works	Implement salt use optimization during deicing season	2018

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	Engineering Department, Department of Public Works	Inspect and maintain treatment structures at least annually	2018
Enclosed salt storage	Existing enclosed salt storage for exposure reduction.	Department of Public Works	Maintain existing enclosed operations	2018
O&M Program (Vehicle Washing)	Perform regular vehicle washing indoors	Department of Public Works	Periodically clean vehicles within existing enclosed wash bay.	2018
O&M Program (Vehicle Maintenance)	Perform regular vehicle maintenance indoors	Department of Public Works	Periodically maintain vehicles within existing enclosed wash bay.	2018

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.

An Illicit Discharge, Detection, and Elimination bylaw is currently under review by the Town for compliance with 2003 permit requirements and is expected to be adopted by the end of Year 1 (June 30, 2019).

Per the 2016 Permit, "Approved TMDLs" are those that have been approved by EPA as of the date of issuance of the permit. Both TMDLs for the Bass River and Swan River were released in May 2017 which is after the MS4 permit issuance date of April 4, 2016. In addition, per the most recent Final 303(d) List available when preparing this NOI (2014 as of September 17, 2018), the Bass River and Swan River are listed specifically as impaired for estuarine bioassessments rather than nitrogen. For this reason, Dennis is not specifically listed by name in the permit as having to meet TMDL or water quality limited waterbody requirements for nitrogen in either Appendix F or Appendix H. However, it is expected that the source of the estuarine bioassessments impairment is excess nitrogen loads, which would then require the Town meet the requirements of part I of Appendix H. Part I of Appendix H then states that permittees may be relieved of meeting these requirements if an EPA approved TMDL indicates that no additional stormwater controls for the control of nitrogen are necessary for the permittee's discharge based on wasteload allocations as part of the approved TMDL. The TMDLs indicate that approximately 75% of nitrogen loading originates from wastewater, with only small amounts originating due to stormwater runoff. TMDLs thus do not require implementing additional nitrogen controls, and instead require permittees to meet the requirements of the MS4 permit. Thus, Dennis will meet the requirements of part IV of Appendix F for waterbodies with a Cape Cod nitrogen TMDL, even though the TMDLs were finalized after the April 4, 2016 MS4 Permit issue date.

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

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:

Elizabeth Sullivan

Title:

Town Administrator

Signature Field

Date:

10/1/18

NOI Submission

Please submit the form electronically via email using the "submit by Email" button below or send in a CD with your completed NOI. You may also print and submit via mail at the address below if you choose not to submit electronically. Outfall map required in Part I of the NOI (if applicable) can be submitted electronically as an email attachment OR as a paper copy.

Permittees that choose to submit their NOI electronically by email or by mailing a CD with the completed NOI form to EPA, will be able to download a partially filled Year 1 Annual Report at a later date from EPA.

Submit by Email

Submit by email using this button. Or, send an email with attachments to: stormwater.reports@epa.gov

Save

Save NOI for your records

EPA Submittal Address:

United States Environmental Protection Agency
5 Post Office Square - Suite 100
Mail Code - OEP06-1
Boston, Massachusetts 02109-3912
ATTN: Newton Tedder

State Submittal Address

Massachusetts Department of Environmental Protection
One Winter Street - 5th Floor
Boston, MA 02108
ATTN: Fred Civian



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

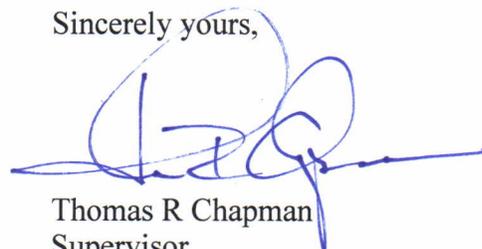
species listed under **Criterion C**,¹ you may still use this letter to certify under **Criterion B**. All existing guidance regarding requirements for certifying eligibility according to the USFWS Criterion A, B, or C for coverage by the 2016 MS4 Permit (see MA MS4 General Permit Appendix C – Endangered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

IPaC resource list

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

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

Project information

NAME

Barnstable County 2016 MS4 Permit

LOCATION

Barnstable County, Massachusetts



DESCRIPTION

Operation and maintenance of existing municipal separate storm sewer systems in accordance with the 2016 Massachusetts Small MS4 General Permit

Local office

New England Ecological Services Field Office

☎ (603) 223-2541

📠 (603) 223-0104

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

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

NOT FOR CONSULTATION

Endangered species

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

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

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

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

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
 2. [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.

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

Mammals

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

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern <i>Sterna dougallii dougallii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2083	Endangered

Reptiles

NAME	STATUS
Plymouth Redbelly Turtle <i>Pseudemys rubriventris bangsi</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/451	Endangered

Insects

NAME	STATUS
Northeastern Beach Tiger Beetle <i>Cicindela dorsalis dorsalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8105	Threatened
Rusty Patched Bumble Bee <i>Bombus affinis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9383	Endangered

Flowering Plants

NAME

STATUS

Sandplain Gerardia *Agalinis acuta*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8128>

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur

and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of](#)

[Engineers District.](#)

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the [NWI map](#) for a full list.

ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

[E1ABL](#)

[M1ABL](#)

[E1UBLx6](#)

[E1UBLx](#)

[E1UBL6](#)

ESTUARINE AND MARINE WETLAND

[E2EM1P](#)

[E2EM1Pd](#)

[M2USM](#)

[M2USP](#)

[E2USM](#)

[M2USN](#)

[E2USN](#)

[E2USP](#)

[E2EM1N](#)

[E2SS1P](#)

[E2EM1/SS1P](#)

[E2EM1Nx](#)

FRESHWATER EMERGENT WETLAND

[PEM1R](#)

[PEM1E](#)

[PEM1F](#)

[PEM1Ed](#)

[PEM1Fh](#)

[PEM1/SS1Rd](#)

[PEM1A](#)

[PEM1C](#)

[PEM1/SS1R](#)

[PEM1Fd](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1E](#)

[PSS1E](#)

[PFO1/4E](#)
[PSS1R](#)
[PFO1R](#)
[PFO4E](#)
[PFO4Eg](#)
[PFO1/4R](#)
[PSS1/4Eg](#)
[PFO1/4Eg](#)
[PSS1Ed](#)
[PFO4R](#)
[PSS1/FO1E](#)
[PFO1A](#)
[PFO1F](#)
[PFO1/SS1E](#)
[PFO1Rd](#)
[PFO1C](#)
[PFO1/4B](#)
[PSS1C](#)
[PSS1Ex](#)
[PFO4A](#)
[PFO1Ed](#)
[PSS1F](#)
[PSS1Fx](#)
[PSS1A](#)

FRESHWATER POND

[PABF](#)
[PABH](#)
[PABHh](#)
[PABKx](#)
[PUBHh](#)
[PUBH](#)
[PUBHx](#)

LAKE

[L1UBH](#)

OTHER

[Pf](#)

RIVERINE

[R4SBC](#)
[R5UBFx](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

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

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

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

Data exclusions

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

Data precautions

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



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

VIA EMAIL

April 5, 2019

Elizabeth Sullivan
Town Administrator

And;

Thomas Andrade
Town Engineer
120 Theophilus F. Smith Road
South Dennis, MA. 02660
tandrade@town.dennis.ma.us

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041103, Town of Dennis

Dear Thomas Andrade:

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

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

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

Information about the permit and available resources can be found on our website:
<https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>. Should you have

any questions regarding this permit please contact Newton Tedder at tedder.newton@epa.gov or (617) 918-1038.

Sincerely,



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

and;



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

Appendix B

Regulatory Review and Legal Authority

Chapter 154

STORMWATER MANAGEMENT

GENERAL REFERENCES

Earth removal – See Ch. 84.

Landfill – See Ch. 244.

Waterways – See Ch. 181.

Sewers – See Ch. 246.

Wetlands – See Ch. 187.

Toxic and hazardous materials – See Ch. 250.

Zoning – See Ch. 191.

§ 154-1. Findings.

- A. Construction site stormwater runoff and post-construction stormwater discharges may permanently alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, which in turn may increase flooding, stream channel erosion, nonpoint source pollution, sediment transport and deposition, and decrease groundwater recharge;
- B. Construction site stormwater runoff and post-construction stormwater discharges can adversely affect public safety, public and private property, surface water, groundwater resources, drinking water supplies, recreation, aquatic habitats, fish and other aquatic life, property values and other uses of land and water;
- C. It is in the public interest to regulate construction site stormwater runoff and post-construction stormwater discharges in order to minimize the impacts identified above.

§ 154-2. Purpose.

- A. The purpose of this bylaw is to manage land development in order to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse impacts of construction site stormwater runoff and post-construction stormwater discharges. This bylaw seeks to meet this purpose through the following objectives:
 - (1) Establish decisionmaking processes surrounding construction site activities that protect the integrity of the watershed and preserve the health of water resources;
 - (2) Require that construction site activities maintain the post-construction runoff characteristics as equal to or less than the pre-construction runoff characteristics;

- (3) Establish minimum construction site and post-construction stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;
 - (4) Encourage the use of nonstructural stormwater management practices or "low-impact development" practices, i.e. grass swales, french drains, etc.;
 - (5) Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;
 - (6) Establish provisions to ensure there is an adequate funding mechanism, including surety, for the proper review, inspection and long-term maintenance of stormwater facilities implemented as part of this bylaw; and
 - (7) Establish administrative procedures, fees and fines for violations for the submission, review, approval or disapproval of applications for stormwater management permits, and for the inspection of approved active projects, and long-term follow up.
- B. Nothing in this bylaw is intended to replace the requirements of the Town of Dennis Wetlands Protection Bylaw,¹ Zoning Bylaw,² Subdivision Rules and Regulations, Board Of Health Regulations³ or any other bylaw that may be adopted by the Town of Dennis, or any state or federal requirement, law, regulation or policy. Any activity subject to the provisions of this bylaw must comply with all other applicable Town, state or federal requirements.

§ 154-3. Definitions.

The following definitions shall apply in the interpretation and implementation of this bylaw. Additional definitions may be adopted by separate regulation:

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

ALTERATION — Any activity, which will change the ability of a ground surface area to absorb water or will change existing surface drainage

1. Editor's Note: See Ch. 187, Wetlands.

2. Editor's Note: See Ch. 191, Zoning.

3. Editor's Note: See Division 3, Board of Health Regulations, of this Code.

patterns. Examples include, but are not limited to, earthmoving, paving, and modification of existing vegetation.

BUILDING COMMISSIONER — The Town of Dennis Building Commissioner or his/her designee.

CONSTRUCTION SITE — Any site where activity is proposed or occurs that involves the alteration of more than 500 contiguous square feet of land.

HOTSPOT AREA — Land uses or activities, without regard to square footage, that have the potential for high stormwater runoff pollutant loadings, including, but not limited to, auto fueling facilities, fleet storage yards, road salt storage areas and designated snow disposal areas, staging areas for construction or landscaping operations, commercial and industrial outdoor maintenance, storage or loading areas.

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.

STORMWATER MANAGEMENT PERMIT — A document signed by the Town of Dennis Building Commissioner which allows the alteration of the land within a hotspot area or construction site based upon the person's proposed work on a project plan which was submitted as required by this Stormwater Management Bylaw.

§ 154-4. 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, and as authorized by the voters of the Town of Dennis at the October 27, 2009, Special Town Meeting under Article 7.

§ 154-5. Administration.

- A. The Town of Dennis Board of Selectmen shall adopt, and may periodically amend, rules and regulations relating to the terms, conditions, definitions, enforcement, fees (including application, inspection, and/or consultant fees), fines and penalties, application requirements, procedures and administration of this Stormwater Management Bylaw, after conducting a public hearing to receive comments on any proposed rules and regulations, or revisions thereto. Failure by the Town of Dennis Board of Selectmen to promulgate such rules and regulations, or a legal declaration of their invalidity by a court, shall not act to suspend or invalidate the effect of this bylaw.
- B. The Building Commissioner shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Building Commissioner may be delegated by the Building Commissioner to his/her designee.

- C. The Building Commissioner may take any of the following actions as a result of an application for a stormwater management permit: approval, approval with conditions, disapproval, or disapproval without prejudice.

§ 154-6. Applicability; exemptions.

- A. All persons that create a construction site or hotspot area are required to satisfy the purpose and intent of this bylaw and in accordance with the "Dennis Stormwater Management Rules and Regulations," as revised.
- B. In addition, all construction sites altering more than 20,000 square feet of total area, and all hotspot areas are required to secure a stormwater management permit prior to starting any land disturbance within the person's property.
- C. The following exemptions from this Stormwater Management Bylaw apply:
- (1) Any land disturbance of 500 square feet or less;
 - (2) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation, 310 CMR 10.04;
 - (3) Emergency activities necessary to protect public health or safety, so long as all necessary emergency permits or emergency certifications have been or will be obtained;
 - (4) Normal maintenance and improvements of Town of Dennis publicly owned roads;
 - (5) Any work or projects for which all necessary approvals and permits have been issued before the effective date of this bylaw.

§ 154-7. Enforcement; violations and penalties.

- A. This bylaw shall be administered by the Building Commissioner. The Building Commissioner shall approve no application of any kind nor drawings or specifications which are not in all respects in conformance with this bylaw.
- B. The Building Commissioner shall be under the supervision of the Board of Selectmen and shall be subject to such administrative procedures as it may prescribe for the proper conduct of this office. The Building Commissioner shall submit an annual report in January of each year of the work of his office.
- C. The Building Commissioner shall make inspections of all sites covered under this bylaw within the Town and may, for these purposes, enter upon the premises where such operations are carried on at all reasonable times.

D. Violations and penalties.

- (1) Any person, corporation or entity found in violation of any provisions of this bylaw shall be punished by a fine in accordance with the following schedule of fines, and each day that the violation continues shall constitute a separate offense:

Number of Offense	Penalty
First offense	Written notice of violation
Second offense	\$100
Third offense and subsequent offenses	\$300

- (2) Notice of violation and procedure shall be in accordance with MGL c. 40, § 21D (noncriminal disposition).

§ 154-8. Severability.

The invalidity of any section, provision, paragraph, sentence or clause of this bylaw shall not invalidate any section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

PROPOSED DENNIS STORMWATER MANAGEMENT RULES AND REGULATIONS

SECTION 1: PURPOSE AND AUTHORITY

A. Purpose

The purpose of this document is to provide the Stormwater Management Rules and Regulations for the Town of Dennis Stormwater Management Bylaw.

B. Authority

The Dennis Board of Selectman, under the authority of Chapter 156 of the Code of the Town of Dennis, and Article 7 of the 2009 October 27th Special Town Meeting, and after holding a duly called Public Hearing on March 30, 2010, adopts these Stormwater Management Rules and Regulations.

SECTION 2: DEFINITIONS

The following definitions describe the meaning of the terms used in these Rules and Regulations:

"Authorized Enforcement Agency": The Dennis Board of Selectmen through the Building Commissioner, shall administer, implement and enforce these Stormwater Management Rules and Regulations.

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

"Alteration" means any activity, which will change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Examples include, but are not limited to, earthmoving, paving and modification of existing vegetation.

"Best management practices (BMP)" are structural or biological devices that temporarily store or treat urban stormwater runoff to reduce flooding, remove pollutants, encourage infiltration and provide other amenities. They can also be non-structural practices that reduce pollutants at their source. BMPs are described in a stormwater design manual, Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Mass. Department of Environmental Protection, as updated or amended).

"Building Commissioner" means the Town of Dennis Building Commissioner or his/her designee.

"Construction activity" is disturbance of the ground by removal of vegetative surface cover or topsoil, grading, excavation, clearing or filling.

"Construction Site" is any site where activity is proposed or occurs that involves the alteration of more than five hundred (500) contiguous square feet of land.

"Design storm" is a ten (10) year rainfall event of specified size and return frequency that is used to calculate the runoff volume and peak discharge rate to a BMP.

"Detention" is the temporary storage of storm runoff in a BMP, which is used to control the peak discharge rates, and which provides gravity settling of pollutants.

"Disturbance" is any land clearing, grading, bulldozing, digging or similar activities.

"Drainage area" means that area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ridgeline.

"Easement" means a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

"Erosion and Sedimentation" is the movement and deposition of soil which creates an unstable soils condition.

"Flow attenuation" means prolonging the flow time of runoff to reduce the peak discharge.

"Hotspot area" is an area where land uses or activities, without regard to square footage, that have the potential for high stormwater runoff pollutant loadings, including, but not limited to, auto fueling facilities, fleet storage yards, road salt storage areas and designated snow disposal areas, long-term staging areas for construction or landscaping operations, and commercial/industrial outdoor maintenance, storage or loading areas.

"Hydrology model" may include one of the following:

- TR-20, a watershed hydrology model developed by the Natural Resources Conservation Service act that is used to route a design storm hydrograph through a pond;
- TR 55, or Technical Release 55, "Urban Hydrology for Small Watersheds" is a publication developed by the Natural Resources Conservation Service to calculate stormwater runoff and an aid in designing detention basins;
- Hydrocad software.

"Impervious surfaces" are areas which prevent the infiltration of water into the soil, including but not limited to asphalt pavement, compacted crushed stone or rooftops.

"Infiltration" is the downward movement of water from the surface to the subsoil.

"Infiltration trench" is a stormwater management excavation filled with aggregate which removes both soluble and particulate pollutants. Trenches are not intended to trap coarse sediments.

"Massachusetts Stormwater Management Policy" is a 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 & s 40 and Massachusetts Clean Waters Act G.L. c 21 s 23-56.

"Outfall" is the terminus of a storm drain or other stormwater structure where the contents are released.

"Peak discharge" is the maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

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

"Person" is 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.

"Public Way" is a Town owned or privately owned road which is open to the public.

"Retention" is the holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

"Start of construction" is the first land-disturbing activity associated with a development, including land preparation such as: clearing, grading and filling; installation of streets and walkways; excavation for basements; footings, piers or foundations; erection of temporary forms; and installation of accessory buildings such as garages.

"Stormwater Facility" is any structural or non-structural device utilized to control stormwater runoff.

"Swale" is a natural manmade depression used to temporarily store, route or filter runoff.

SECTION 3: APPLICABILITY

- A. All persons that create a Construction Site or Hotspot Area are required to satisfy the purpose and intent of the Stormwater Management Bylaw and in accordance with these Dennis Stormwater Management Rules and Regulations, as revised.

- B. In addition, all construction sites altering more than 20,000 square feet of total area, and all Hotspot areas are required to secure a Stormwater Management Permit prior to starting any land disturbance within the person's property.
- C. The following are exempt from the requirements of this document:
1. Any land disturbance 500 square feet or less.
 2. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.04;
 3. Emergency activities necessary to protect public health or safety, so long as all necessary emergency permits or emergency certifications have been or will be obtained;
 4. Normal maintenance and improvements of Town of Dennis Publicly Owned Roads.
 5. Any work or projects for which all necessary approvals and permits have been issued before the effective date of this Bylaw.

SECTION 4: STORMWATER MANAGEMENT PERMIT PROCEDURES AND REQUIREMENTS

A. Permit Required

Prior to the issuance of any site plan approval or development permit for any proposed construction site or hotspot area as indicated in Section 3B, a stormwater management permit must be approved by the Building Commissioner. No person shall, on or after the effective date of the Stormwater Management Bylaw, initiate any land clearing, land grading, earth moving or development activities without first complying with these Stormwater Management Rules and Regulations.

B. Application Requirements

Application for approval of a Stormwater Management Permit shall include the following:

1. A Stormwater Management Plan in accordance with Section 5 shall be submitted to the Building Commissioner for review and approval for any proposed development specified in Section 3A. The Building Commissioner may require the Stormwater Management Plan be signed and sealed by a Licensed Professional Engineer and/or Surveyor, and submitted along with the other required documents for site plan review. The Plan shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire property. The Plan shall serve as the basis for all subsequent construction.

2. An Erosion and Sediment Control Plan.
3. Maintenance Plan.
4. Non-refundable permit review fee.

C. Procedures for Review and Approval of Stormwater Permits

1. The procedures for review and approval of stormwater management permits shall be consistent with the review procedures of the Building Commissioner as appropriate to the use.
2. The Building Commissioner shall refer copies of the stormwater management permits to the Town Engineer for review, and shall consider any comments submitted by the Town Engineer during the review period.

D. Criteria for Review of Stormwater Permits

In addition to other criteria used by the Building Commissioner in making permit decisions, for the uses specified in these Rules and Regulations, the Building Commissioner must also find that the Stormwater Management Plan submitted with the permit application meets the following criteria:

1. The Stormwater Management Plan and the Erosion and Sediment Control Plan shall be consistent with the Purpose of these Rules and Regulations as defined in Section 1A;
2. The Stormwater Management Plan shall satisfy the Performance Standards described in Section 5;
3. The Erosion and Sediment Control Plan shall satisfy the Design Guidelines in Section 6.

E. Building Commissioner's Action

1. The Building Commissioner's action, rendered in writing, shall consist of either:
 - a. Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Building Commissioner which will ensure that the proposed project plans satisfies the purposes in Section 1A and the standards in Section 6 and adequately protect the water resources of the community and is in compliance with the requirements set forth in these Rules and Regulations.
 - b. Disapproval of the Stormwater Management Permit Application based upon a

- determination that the proposed project plan, as submitted, does not satisfy the purposes in Section 1A and the standards in Section 6 or adequately protects the water resources, as set forth in these Rules and Regulations.
2. The Building Commissioner may waive certain requirements of Section 5 based upon site specific conditions.
 3. The applicant may appeal the decision of the Building Commissioner, within thirty (30) consecutive calendar days, to the Dennis Board of Selectmen.
 4. Failure of the Building Commissioner to take final action upon an Application within One Hundred and Twenty (120) consecutive calendar days shall be deemed to be approval of said Application.

F. Inspections

1. No work shall commence prior to approval of the Stormwater Management Permit. The applicant shall coordinate with the Building Commissioner for scheduling of inspections as determined in said Plan.
2. The Building Commissioner shall inspect the work and either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved Plan. Any portion of the work which does not comply shall be promptly corrected by the applicant or the applicant will be subject to the bonding provisions of Section 9 or the penalty provisions of Section 10. The Town may conduct random inspections to ensure effective control of erosion and sedimentation during all phases of construction.

G. Permit Application Review Fees

The Stormwater Management Permit Fee for review of any land development application shall be a lump sum of \$300.00. This fee structure shall be revised, when necessary, by the Dennis Board of Selectmen.

SECTION 5: THE STORMWATER MANAGEMENT AND EROSION CONTROL PLAN

The application for a Stormwater Management Permit shall include the submittal of three (3) copies of the Stormwater Management Plan and Erosion Control Plan, which meets the design requirements provided by these Rules and Regulations. The Plan shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed development on water resources; and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The Plan must be designed to meet the Massachusetts Stormwater Management Standards as set forth in Section 5 of these Rules and Regulations and the DEP Stormwater Management Handbook

Volumes I and II, as amended. The applicant shall certify on the drawings that all clearing, grading, drainage, construction, and development shall be conducted in strict accordance with the plan. The minimum information submitted for support of a stormwater management plan shall be as follows:

1. A locus map and north arrow,
2. The existing zoning, and land use at the site,
3. The proposed land use,
4. The location(s) of existing and proposed easements,
5. The location of existing and proposed utilities,
6. The site's existing & proposed topography with contours at 2 foot intervals with spot elevations where necessary,
7. A description & delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which storm water flows,
8. A delineation of 100-year flood plains, if applicable,
9. Estimated seasonal high groundwater elevation (November to April) in areas to be used for storm water retention, detention or infiltration,
10. The existing and proposed vegetation and ground surfaces with runoff coefficient for each,
11. A drainage area map showing pre and post construction watershed boundaries, drainage area and storm water flow paths,
12. A description and drawings of all components of the proposed drainage system including:
 - a. Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization.
 - b. All measures for the detention, retention or infiltration of water.
 - c. All measures for the protection of water quality.
 - d. The structural details for all components of the proposed drainage systems and storm water management facilities.
 - e. Notes on drawings specifying materials to be used, construction specifications, and typical details.
 - f. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities.
 - g. A description of construction and waste materials expected to be stored on-site, and a description of controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.
 - h. Sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization.
 - i. A maintenance schedule for the period of construction.

SECTION 6: STORMWATER MANAGEMENT PERFORMANCE STANDARDS

A. Minimum Control Requirements

1. Projects must meet the following standards:

- a. No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or water of the Commonwealth.
- b. Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.
- c. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site should approximate the annual recharge rate from the pre-development or existing site conditions, based on soil types.
- d. For new development, stormwater management systems must be designed to remove 80% of the average annual load (post development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:
 - (1) Suitable nonstructural practices for source control and pollution prevention and implemented;
 - (2) Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and
 - (3) Stormwater management BMPs are maintained as designed.
- e. Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs (see Stormwater Management Volume I: Stormwater Policy Handbook). The use of infiltration practices without pretreatment is prohibited.
- f. Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas (see Stormwater Management Volume I: Stormwater Policy Handbook). Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries and recharge areas for public water supplies.
- g. Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.
- h. Erosion and sediment controls must be implemented to prevent impacts during disturbance and construction activities.

- i. All stormwater management systems must have an operation and maintenance plan to ensure that systems function as designed.
2. In some cases, the Building Commissioner may require an increase in these minimum requirements.

B. Stormwater Management Measures

- 1 Stormwater management measures shall be required to satisfy the minimum control requirements:
 - a. Infiltration, flow attenuation, and pollutant removal of runoff on-site to existing areas with grass, trees, and similar vegetation and through the use of open vegetated swales and natural depressions.
 - b. Use of stormwater on-site to replace Town water for irrigation.
 - c. Stormwater detention structures for the temporary storage of runoff which is designed so as not to create a permanent pool of water.
2. Best Management Practices shall be employed to minimize pollutants in stormwater runoff prior to discharge into a separate storm drainage system or water body.
3. All stormwater management facilities shall be designed to provide an emergency overflow system, and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.

C. Design Criteria

Stormwater Design Manual

A stormwater design manual, Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Mass. Department of Environmental Protection, as updated or amended) is hereby incorporated by reference as part of these Rules and Regulations, and shall furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the requirements of these Rules and Regulations. This manual includes a list of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice.

1. Infiltration systems
 - a. Infiltration systems shall be equipped with clean stone and or filter fabric adjacent to the soil or other sediment removal mechanisms.

- b. Infiltration systems greater than 3 feet deep shall be located at least 10 feet from basement walls.
 - c. Due to the potential for groundwater contamination from dry wells, they shall not be an acceptable method for management runoff containing pollutants.
 - d. Infiltration systems shall:
 - (1) be designed to handle runoff from commercial or industrial impervious parking areas shall be a minimum of 100 feet from any drinking water supply well.
 - (2) be used as sediment control basins during construction unless specific plans are included to restore or improve the basin surface.
 - (3) be constructed with a three foot minimum separation between the bottom of the structure and the seasonal high groundwater elevation, as determined by a certified soil evaluator.
 - e. Provisions shall be made for safe overflow passage, in the event of a storm which exceeds the capacity of an infiltration system.
2. Retention and detention ponds shall be designed and constructed in accordance with the criteria of the Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Mass. Department of Environmental Protection, as updated or amended).
 3. The applicant shall give consideration in any plan to incorporating the use of natural topography and land cover such as natural swales, and depressions as they exist prior to development to the degree that they can accommodate the additional flow of water.
 4. The Town Engineer may give preference to the use of swales in place of the traditional use of curbs and gutters based on a case by case review of stormwater management plans.
 5. Where a stormwater management plan involves direction of some or all runoff off of the site, it shall be the responsibility of the applicant to obtain from affected property owners any easements or other necessary property interests concerning flowage of water. Approval of a stormwater management plan does not create or affect any such rights.
 6. All applicants for commercial or industrial projects which involve the storage or use of hazardous chemicals shall incorporate handling and storage "best management practices" that prevent such chemicals from contaminating runoff discharged from a site into infiltration systems, receiving water bodies or storm drains, and shall include a list of such chemicals, and include the approximate volume/weight of each chemical, in the application.
 7. Runoff from parking lots shall be treated by oil and water separators or other Town approved controls to remove oil and sediment.
 8. Institute interim and permanent stabilization measures. The measures shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site.

SECTION 7: DESIGN GUIDELINES FOR EROSION AND SEDIMENT CONTROL PLAN

The design requirements of the Erosion and Sediment Control Plan are:

1. Minimize total area of disturbance.
2. Sequence activities to minimize simultaneous areas of disturbance.
3. Minimize peak rate of runoff in accordance with the MA. D.E.P. Stormwater Policy.
4. Minimize soil erosion and control sedimentation during construction. Prevention of erosion is preferred over sedimentation control.
5. Divert uncontaminated water around disturbed areas.
6. Maximize groundwater recharge.
7. Install, and maintain all Erosion and Sediment Control measures in accordance with the manufacturer's specifications and good engineering practices.
8. Prevent off-site transport of sediment, including vehicle tracking.
9. Protect and manage on-site and other designated material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project).
10. Comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control.
11. Prevent adverse impact from the proposed activities to habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species.

SECTION 8: MAINTENANCE

A. Operation, Maintenance and Inspection Agreement

1. Prior to issuance of any building permit for which stormwater management is required, the Building Commissioner shall require the applicant or owner to execute an operation, maintenance and inspection agreement binding on all subsequent owners of land served by

the private stormwater management facility. The agreement shall be designed to ensure that water quality standards are met in all seasons and throughout the life of the system. Such agreement shall provide for access to the facility at reasonable times for inspections by the Town to ensure that the facility is maintained and operating in proper working condition to meet design standards and any provision established. The agreement shall include:

- a. The name(s) of the owner(s) for all components of the system.
 - b. Maintenance agreements that specify:
 - (1) The name and address of the person responsible for operation and maintenance.
 - (2) The person(s) responsible for financing maintenance and emergency repairs.
 - (3) A Maintenance Schedule for all drainage structures, including swales and ponds.
 - (4) A list of easements with the purpose and location of each.
 - (5) The signature(s) of the owner(s).
 - c. Stormwater management easements as necessary for:
 - (1) Access for facility inspections and maintenance.
 - (2) Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event.
 - (3) Direct maintenance access by heavy equipment to structures requiring regular cleanout.
 - d. Stormwater management easement requirements:
 - (1) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
 - (2) Stormwater management easements are required for all areas used for off-site stormwater control.
 - (3) Easements shall be recorded with the Registry of Deeds prior to issuance of a Certificate of Completion.
 - e. Changes to Operation and Maintenance Plans
 - (1) The owner(s) of the stormwater management system must notify the Building Commissioner of changes in ownership or assignment of financial responsibility.
 - (2) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this by-law by mutual agreement of the Building Commissioner and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties must include owner(s), persons with financial responsibility, and persons with operational responsibility.
2. The agreement shall be recorded by the applicant and/or owner in the land records of the Registry of Deeds.
 3. The agreement shall also provide that, if after notice by the Town to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within ten working days, the Building Commissioner may perform all necessary work to place the facility in proper working condition particularly if the deficiency affects public property. The owner(s) of the facility shall be responsible for the cost of the work and any penalties or fines imposed.

B. Maintenance Responsibility

1. The owner of the property on which work has been done pursuant to these Rules and Regulations for private stormwater management facilities, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.
2. A maintenance schedule shall be developed for any stormwater management facility and shall state the maintenance to be completed, the time period for completion, and who shall be legally responsible to perform the maintenance. This maintenance schedule shall be part of the stormwater management plan.
3. The owner(s) shall maintain records of installation, repairs and maintenance performed on the stormwater management facility.

SECTION 9: PERFORMANCE BOND

The Town shall require a surety or cash bond or other form of security for the satisfactory completion of the stormwater management facility. No building permit for the construction of a development requiring a stormwater management facility shall be issued prior to the receipt of said bond. The amount of the security shall not be less than the total estimated construction cost of the stormwater management facility. The bond so required in this section shall include provisions relative to forfeiture for failure to complete work specified in the approved stormwater management plan, compliance with all of the provisions of this By-law and other applicable laws and regulations, and any time limitations. The bond shall not be fully released without a final inspection of the completed work by the Town Engineer, submission of "As-built" plans, and certification of completion by the Building Commissioner of the stormwater management facilities being in compliance with the approved plan and the provisions of these Rules and Regulations.

SECTION 10: ENFORCEMENT AND PENALTIES

A. Violations:

Any construction site or hotspot area activity that has commenced or is conducted contrary to the Stormwater Management Bylaw may be restrained by injunction or otherwise abated in a manner provided by law.

B. Notice of Violation:

When the Building Commissioner determines that an activity is not being carried out in accordance with the requirements of these Rules and Regulations, the owner(s) of the property shall be issued a written Notice of Violation. The owner(s) shall have ten (10) consecutive calendar days to satisfactorily address the violation without incurring penalties or fees.

C. Stop Work Orders:

Persons receiving a Notice of Violation will be required to immediately stop all construction activities. This "Stop Work Order" will be in effect until the Building Commissioner confirms that the construction site or hotspot area activity is in compliance and the violation has been satisfactorily addressed. Failure to address a Notice of Violation in a timely manner can result in civil, criminal or monetary penalties in accordance with the enforcement measures authorized in these Rules and Regulations.

D. Violations and Penalties.

- 1) Any person, corporation or entity found in violation of any provisions of the Stormwater Management Bylaw shall be punished by a fine in accordance with the following schedule of fines, and each day that the violation continues shall constitute a separate offense:

Number of Offense	Penalty
First Offense *****	Written Notice Of Violation.
Second Offense *****	\$100.00
Third Offense and	
Subsequent Offenses *****	\$300.00

- 2) Notice of violation and procedure shall be in accordance with M.G.L.A. C.40, para.21D (Non-criminal disposition).

Chapter 154

STORMWATER MANAGEMENT

- § 154-1. Findings.
- § 154-2. Purpose.
- § 154-3. Definitions.
- § 154-4. Authority.
- § 154-5. Administration.
- § 154-6. Applicability; exemptions.
- § 154-7. Enforcement; violations and penalties.
- § 154-8. Severability.

[HISTORY: Adopted by the Special Town Meeting of the Town of Dennis 10-27-2009 by Art. 7. Amendments noted where applicable.]

GENERAL REFERENCES

Earth removal — See Ch. 84.
Waterways — See Ch. 181.
Wetlands — See Ch. 187.
Zoning — See Ch. 191.
Landfill — See Ch. 244.
Sewers — See Ch. 248.
Toxic and hazardous materials — See Ch. 250.

§ 154-1. Findings.

- A. Construction site stormwater runoff and post-construction stormwater discharges may permanently alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, which in turn may increase flooding, stream channel erosion, nonpoint source

pollution, sediment transport and deposition, and decrease groundwater recharge;

- B. Construction site stormwater runoff and post-construction stormwater discharges can adversely affect public safety, public and private property, surface water, groundwater resources, drinking water supplies, recreation, aquatic habitats, fish and other aquatic life, property values and other uses of land and water;
- C. It is in the public interest to regulate construction site stormwater runoff and post-construction stormwater discharges in order to minimize the impacts identified above.

§ 154-2. Purpose.

- A. The purpose of this bylaw is to manage land development in order to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse impacts of construction site stormwater runoff and post-construction stormwater discharges. This bylaw seeks to meet this purpose through the following objectives:
 - (1) Establish decisionmaking processes surrounding construction site activities that protect the integrity of the watershed and preserve the health of water resources;
 - (2) Require that construction site activities maintain the post-construction runoff characteristics as equal to or less than the pre-construction runoff characteristics;
 - (3) Establish minimum construction site and post-construction stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;

- (4) Encourage the use of nonstructural stormwater management practices or "low-impact development" practices, i.e. grass swales, french drains, etc.;
 - (5) Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;
 - (6) Establish provisions to ensure there is an adequate funding mechanism, including surety, for the proper review, inspection and long-term maintenance of stormwater facilities implemented as part of this bylaw; and
 - (7) Establish administrative procedures, fees and fines for violations for the submission, review, approval or disapproval of applications for stormwater management permits, and for the inspection of approved active projects, and long-term follow up.
- B. Nothing in this bylaw is intended to replace the requirements of the Town of Dennis Wetlands Protection Bylaw,¹ Zoning Bylaw,² Subdivision Rules and Regulations, Board Of Health Regulations³ or any other bylaw that may be adopted by the Town of Dennis, or any state or federal requirement, law, regulation or policy. Any activity subject to the provisions of this bylaw must comply with all other applicable Town, state or federal requirements.

1. Editor's Note: See Ch. 187, Wetlands.

2. Editor's Note: See Ch. 191, Zoning.

3. Editor's Note: See Division 3, Board of Health Regulations, of this Code.

§ 154-3. Definitions.

The following definitions shall apply in the interpretation and implementation of this bylaw. Additional definitions may be adopted by separate regulation:

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

ALTERATION — Any activity, which will change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Examples include, but are not limited to, earthmoving, paving, and modification of existing vegetation.

BUILDING COMMISSIONER — The Town of Dennis Building Commissioner or his/her designee.

CONSTRUCTION SITE — Any site where activity is proposed or occurs that involves the alteration of more than 500 contiguous square feet of land.

HOTSPOT AREA — Land uses or activities, without regard to square footage, that have the potential for high stormwater runoff pollutant loadings, including, but not limited to, auto fueling facilities, fleet storage yards, road salt storage areas and designated snow disposal areas, staging areas for construction or landscaping operations, commercial and industrial outdoor maintenance, storage or loading areas.

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.

STORMWATER MANAGEMENT PERMIT — A document signed by the Town of Dennis Building Commissioner which allows the alteration of the land within a hotspot area or construction site based upon the person's proposed work on a project plan which was submitted as required by this Stormwater Management Bylaw.

§ 154-4. 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, and as authorized by the voters of the Town of Dennis at the October 27, 2009, Special Town Meeting under Article 7.

§ 154-5. Administration.

- A. The Town of Dennis Board of Selectmen shall adopt, and may periodically amend, rules and regulations relating to the terms, conditions, definitions, enforcement, fees (including application, inspection, and/or consultant fees), fines and penalties, application requirements, procedures and administration of this Stormwater Management Bylaw, after conducting a public hearing to receive comments on any proposed rules and regulations, or revisions thereto. Failure by the Town of Dennis Board of Selectmen to promulgate such rules and regulations, or a legal declaration of their invalidity by a court, shall not act to suspend or invalidate the effect of this bylaw.
- B. The Building Commissioner shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Building Commissioner may be delegated by the Building Commissioner to his/her designee.
- C. The Building Commissioner may take any of the following actions as a result of an application for a stormwater

management permit: approval, approval with conditions, disapproval, or disapproval without prejudice.

§ 154-6. Applicability; exemptions.

- A. All persons that create a construction site or hotspot area are required to satisfy the purpose and intent of this bylaw and in accordance with the "Dennis Stormwater Management Rules and Regulations," as revised.
- B. In addition, all construction sites altering more than 20,000 square feet of total area, and all hotspot areas are required to secure a stormwater management permit prior to starting any land disturbance within the person's property.
- C. The following exemptions from this Stormwater Management Bylaw apply:
 - (1) Any land disturbance of 500 square feet or less;
 - (2) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation, 310 CMR 10.04;
 - (3) Emergency activities necessary to protect public health or safety, so long as all necessary emergency permits or emergency certifications have been or will be obtained;
 - (4) Normal maintenance and improvements of Town of Dennis publicly owned roads;
 - (5) Any work or projects for which all necessary approvals and permits have been issued before the effective date of this bylaw.

§ 154-7. Enforcement; violations and penalties.

- A. This bylaw shall be administered by the Building Commissioner. The Building Commissioner shall approve no application of any kind nor drawings or specifications which are not in all respects in conformance with this bylaw.
- B. The Building Commissioner shall be under the supervision of the Board of Selectmen and shall be subject to such administrative procedures as it may prescribe for the proper conduct of this office. The Building Commissioner shall submit an annual report in January of each year of the work of his office.
- C. The Building Commissioner shall make inspections of all sites covered under this bylaw within the Town and may, for these purposes, enter upon the premises where such operations are carried on at all reasonable times.
- D. Violations and penalties.
 - (1) Any person, corporation or entity found in violation of any provisions of this bylaw shall be punished by a fine in accordance with the following schedule of fines, and each day that the violation continues shall constitute a separate offense:

Number of Offense	Penalty
First offense	Written notice of violation
Second offense	\$100
Third offense and subsequent offenses	\$300

- (2) Notice of violation and procedure shall be in accordance with MGL c. 40, § 21D (noncriminal disposition).

§ 154-8. Severability.

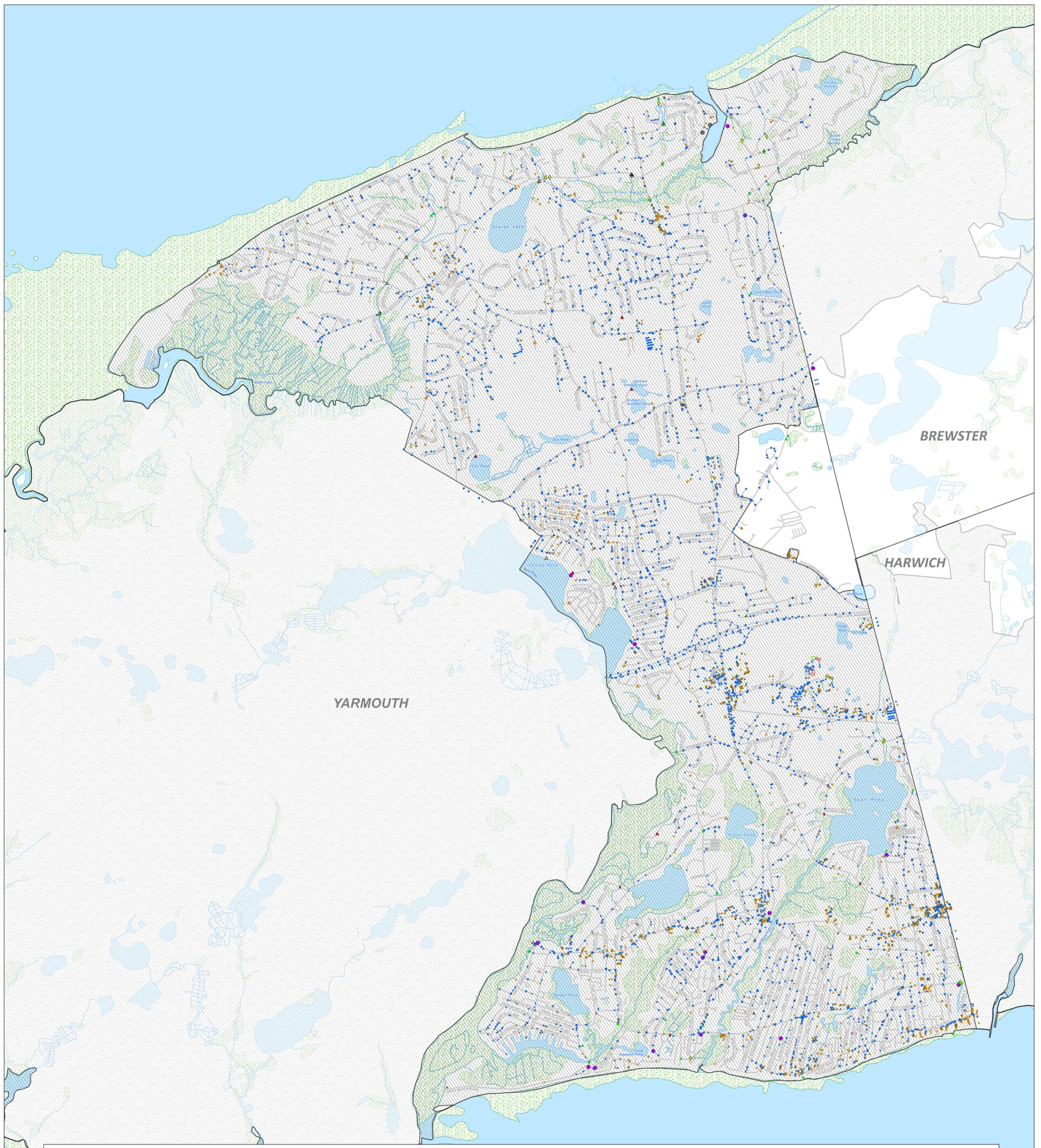
The invalidity of any section, provision, paragraph, sentence or clause of this bylaw shall not invalidate any section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

Appendix C

Stormwater System Mapping

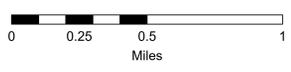
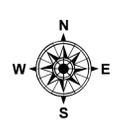
Mapping Status

Requirement Summary	Status
Phase I – Must be Complete by July 1, 2020	
1. Outfalls and receiving waters	Complete
2. Open channel conveyances	Complete (updates ongoing)
3. Interconnections with other MS4s	Ongoing
4. Municipally owned structural BMPs	Complete
5. Waterbody names and impairments	Complete
6. Initial catchment delineations by topography	Complete (updates ongoing)
Phase II – Must be Complete by July 1, 2028	
1. Outfalls with spatial accuracy +/-30 feet	Complete
2. Pipe connectivity	Ongoing
3. Manholes	Complete
4. Catch basins	Complete
5. Refined catchment delineations	Not started
6. Municipal sanitary system	Not Applicable
7. Municipal combined sewer system	Not Applicable



Legend

- | | |
|--|---|
|  Outfalls |  Stormwater BMP |
|  Likely Outfall |  Retention Basins |
|  Possible Outfall |  Swales |
|  Possible Culvert |  Drainage Pipes |
|  Non-Town Outfall |  Urbanized Area |
|  Catch Basins |  Lake, Pond, Reservoir |
|  Manholes |  Wetland, Marsh, Swamp |
|  Culvert |  Stream, Brook |



Stormwater Map

Dennis, MA

Comprehensive
Environmental
Incorporated



Data Sources: CEI, MassGIS, Town of Dennis

Appendix D

Inventory of Town-Owned Property

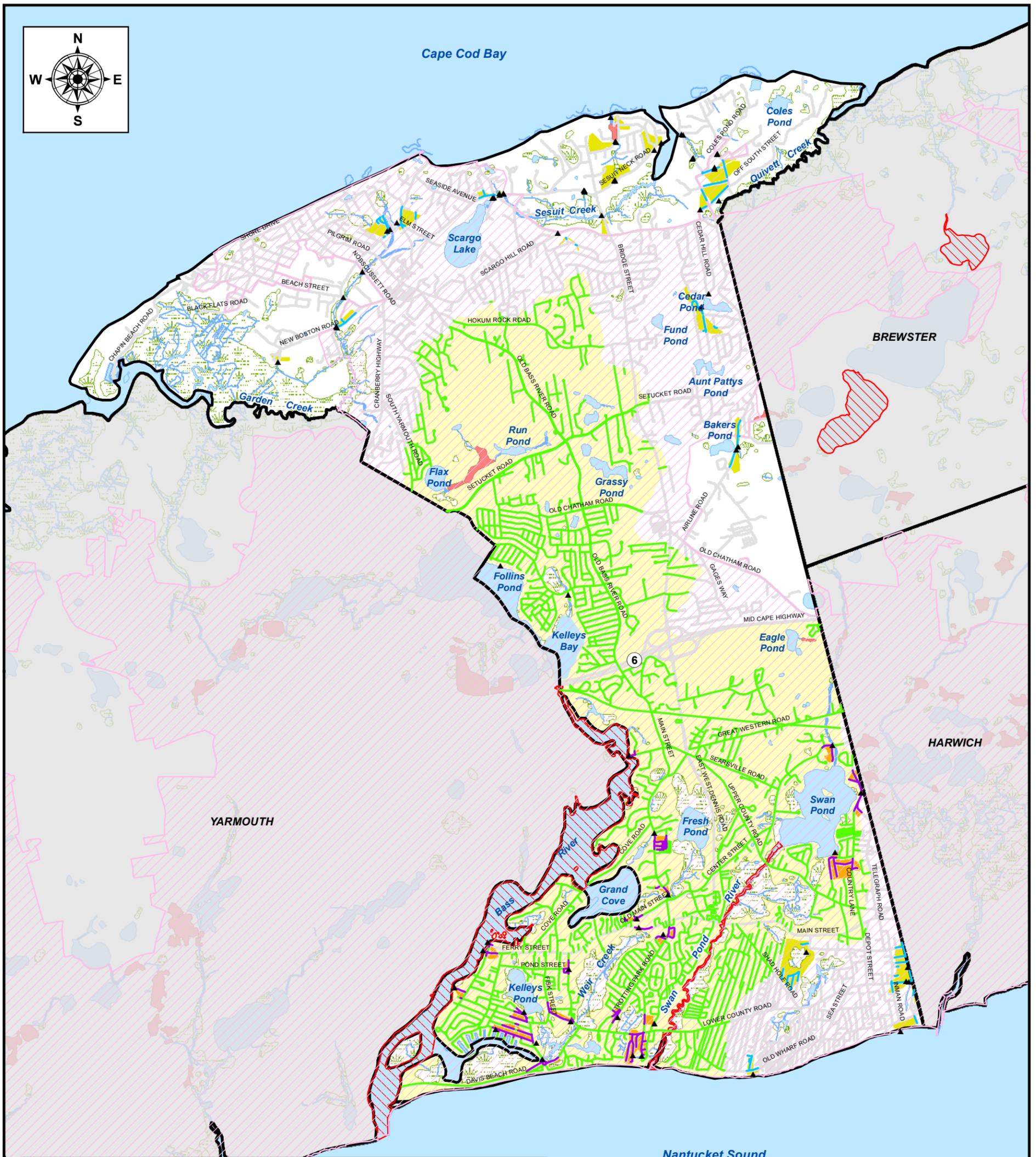
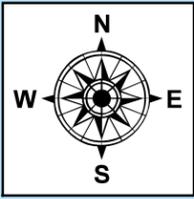
Site Name	Address	Responsible Department	Notes	General				Cut & dispose of grass clippings?	Collection & disposal of leaf litter?
				Is property owned by the Town but under lease agreement with a private/non-profit entity?	Custodial maintenance services provided by the Town of Sandown?	Grounds maintenance services provided by the Town of Sandown?			
MUNICIPAL BUILDINGS									
Town Hall	320 Main Street			NO	YES	YES		YES	YES
Fire Department - Central Fire Station	314 Main Street			NO	YES	YES		YES	YES
Fire Department - Angle Pond Fire Station	17 Main Street			NO	YES	YES		NO	NO
Police Department	460 Main Street			NO	YES	YES		YES	NO
Highway Department/Transfer Station	26 Depot Road			NO	YES	YES		YES	YES
SCHOOLS AND COMMUNITY BUILDINGS									
Sandown Public Library	305 Main Street			NO	YES	YES		YES	YES
Edward C. Garvey Recreation Facility	25 Pheasant Run Drive			NO	YES	NO		NO	NO
Edward C. Garvey Recreation Fields	25 Pheasant Run Drive			NO	NO	NO		NO	NO
Miller Fields	212 Main Street			NO	NO	NO		NO	YES
Sandown North Elementary School	23 Stagecoach Road			N/A	N/A	N/A		N/A	N/A
Sandown Central School	295 Main Street			N/A	N/A	N/A		N/A	N/A
OPEN SPACES									
Parks/Trails/Historic Buildings									
Fremont Road Town Forest Trail and Red Barn	Access from Fremont Road			NO	YES	YES		YES	NO
Rockingham Recreational Trail	6 Depot Road			N/A	N/A	N/A		N/A	N/A
Punch Pond and Cub Pond Trails	Access from off of Morrison Lane			NO	N/A	YES		NO	NO
Eagle Trail	Access from Odell Road south of Meadow Brook Crossing			NO	N/A	YES		NO	NO

Parks & Open Space				Buildings, Facilities, & Storage Yards										Vehicles and Equipment			Infrastructure a					
Use, store or dispose of pesticides, herbicides, and fertilizers?	Exterior trash cans available for public?	Dogs allowed on property?	Do waterfowl congregate here?		Is there a building on the property?	Exterior dumpsters at site?	Are petroleum products or other products used, stored or disposed of?	Is salt stored on-site?	Is sand stored on-site?	Are there any floor drains located in the building?	Does the facility have a Spill Prevention Control and Countermeasures Plan (SPCC) Plan?	Does the facility have a Stormwater Pollution Prevention Plan (SWPPP)?	Any existing written Standard Operating Procedures (SOPs) or O&M Manuals?		Are vehicles and/or equipment stored outdoors?	Are vehicles and/or equipment washed outdoors?	Is fueling performed on-site?		Are there any catch basin on the property?	Do any of the catch basins have an oil/water separator?	Are there any outfalls on the property?	
NO	YES	YES	NO		YES	NO	NO	NO	NO	YES	NO	NO	NO		NO	NO	NO		NO	N/A	NO	
NO	NO	NO	NO		YES	NO	YES	NO	NO	NO	YES	NO	YES		*YES	YES	YES		NO	N/A	NO	
NO	NO	YES	NO		YES	NO	YES	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	N/A	NO	
NO	NO	YES	NO		YES	NO	NO	NO	NO	YES	NO	NO	YES		NO	NO	NO		NO	N/A	NO	
NO	NO	NO	NO		YES	NO	YES	YES	YES	NO	*NO	NO	NO		YES	YES	YES		YES	NO	NO	
NO	NO	NO	NO		YES	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	N/A	NO	
NO	NO	NO	NO		YES	YES	YES	NO	NO	NO	NO	NO	*YES		NO	NO	NO		NO	N/A	NO	
NO	NO	NO	NO		YES	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	N/A	NO	
NO	YES	NO	NO		YES	*YES	YES	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	N/A	NO	
N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	
N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	
NO	NO	YES	YES		YES	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	N/A	NO	
N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	
NO	NO	YES	NO		NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	NO	NO	
NO	NO	YES	NO		NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO	NO		NO	NO	NO	

nd Maintenance			Comments
Does the property have paved surfaces?	Is snow stored on-site?	Are there any stormwater treatment BMPs at the site?	
YES	NO	NO	
YES	NO	NO	*during forest fire season
YES	NO	NO	
YES	NO	NO	
YES	NO	NO	*procedures in place
YES	NO	NO	
YES	NO	NO	*for summer program
NO	NO	NO	
NO	NO	NO	*seasonally only
N/A	N/A	N/A	Not owned by Town
N/A	N/A	N/A	Not owned by Town
NO	NO	NO	
N/A	N/A	N/A	Not owned by Town
NO	NO	NO	
NO	NO	NO	

Appendix E

Street Sweeping Optimization Plan



Street Sweeping Twice per Year within Urbanized Area
 Street sections within outfall catchments = 12 lane miles (required)
 Street sections within impaired water body subbasins = 258 miles (not required)

Street Sweeping Once per Year within a MS4 Catchment and Urbanized Area
 Street sections within a MS4 catchment and UA that are not included in other required street sweeping categories = 8 lane miles (required)

Legend

- ▲ MS4 Outfalls
- Urbanized Area - 2010
- 303d Water Bodies**
- Impaired Lake, Pond
- Impaired River, Stream
- Hydrography**
- Lake, Pond, River
- Wetland
- Cranberry Bog
- Stream, Brook
- Outfall Catchments**
- Discharges to Impaired Water Body Subbasin within UA
- Does Not Discharge to Impaired Water Body Subbasin within UA
- Impaired Water Body Subbasin**
- Sweep Twice per Year (Bass River and Swan River)
- Street Sweeping Once per Year within MS4 Catchment and UA (required)
- Street Sweeping Twice Per Years, within UA**
- Within MS4 Catchment (Required)
- Within Impaired Water Body Subbasin (not required)



Street Sweeping Map

Sweeping per Phase II Requirements

Dennis, Massachusetts



Comprehensive Environmental Inc.

Appendix F

Catch Basin Optimization Plan

Plan for Optimizing Catch Basin Cleaning

Dennis, MA

June 30, 2019

Prepared For:

Town of Dennis
685 Route 134
South Dennis, MA 02660

Prepared by:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740



Table of Contents

Plan for Optimizing Catch Basin Cleaning – Dennis, MA

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List of Appendices

- Appendix A. Map of Drainage Infrastructure
- Appendix B. Standard Operating Procedures for Catch Basin Cleaning and Inspection

1 Introduction

This Catch Basin Cleaning Optimization Plan has been prepared by Dennis, MA to address the catch basin inspection, cleaning and maintenance requirements of the United States Environmental Protection Agency's (USEPA's) 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts, hereafter referred to as the "2016 MS4 Permit."

The 2016 MS4 Permit requires the permittee to document its plan for optimizing catch basin cleaning, inspections, or its schedule for gathering information to develop the optimization plan. This plan documents the Town's existing catch basin cleaning program and its plans for gathering additional information to refine its program to meet the requirements of the permit.

2 Permit Requirements

This Catch Basin Cleaning Optimization Plan addresses Section 2.3.7.1.a.iii.2 of the 2016 MS4 Permit (Infrastructure Operations and Maintenance), which includes the following requirements:

- **Establish a schedule** with the goal that the frequency of routine cleaning will ensure that no catch basin at any time will be more than 50 percent full¹;
- **Prioritize** inspection and maintenance for catch basins:
 - located near construction activities². These should be cleaned more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings;
 - discharging to impaired waters where the pollutant of concern is E. coli, solids, or phosphorus; and
 - with sumps more than 50% full during consecutive inspections.
- **Establish proper documentation** of catch basin inspections to include:
 - the location and total number of catch basins;
 - the location and total number of catch basins cleaned or inspected; and
 - the total volume or mass of material removed from catch basins.
- **Develop an optimization plan** for catch basin cleaning, inspection plans, or a schedule for gathering information to develop the optimization plan in the first annual report and in the SWMP.

¹ A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.

² Roadway construction; residential, commercial, or industrial development or redevelopment.

3 Existing Catch Basin Management Program

The Town has 4,636 catch basins to clean and maintain. Refer to the map in **Appendix A**. Given the large number of basins and expense of cleaning, one-third of the catch basins are cleaned each year using an outside contractor. Inspections of the catch basins are completed before the cleanings by Town employees with varying levels of detail and tracking. Inspections are recorded on a tracking form and imported into a spreadsheet to track the number of catch basins being cleaned on a per-road basis. Dennis has prioritized certain catch basins that are cleaned more frequently, including those at the bottoms of hills throughout the town and near the Bass River. Catch basin cleanings at priority areas are completed about once a year. The materials are stored at a transfer station then taken to a landfill.

4 Plans to Refine Catch Basin Cleaning Optimization

4.1 Optimization Methodology

Dennis will continue to implement its existing catch basin cleaning schedule including more frequent cleaning of catch basins with known higher sediment loads. During this time, the Town will collect data on the sump depth and sediment depth in each catch basin. The catch basin inspection form included with the standard operating procedure (SOP) in **Appendix B** will be used to document data collected during cleaning.

A minimum of three years of data will be collected and evaluated to determine the status of the catch basins and whether the sump was more than half full. The catch basins that are more than 50% full will be evaluated for potential factors that may have contributed to it being 50% full (i.e., smaller sump, nearby construction, surrounding land uses, location in town). The evaluation will be used to identify catch basins that require more frequent inspection and/or cleaning and to develop an optimization plan that prioritizes these structures accordingly.

4.2 Catch Basin Cleaning Standard Operation Procedure (SOP)

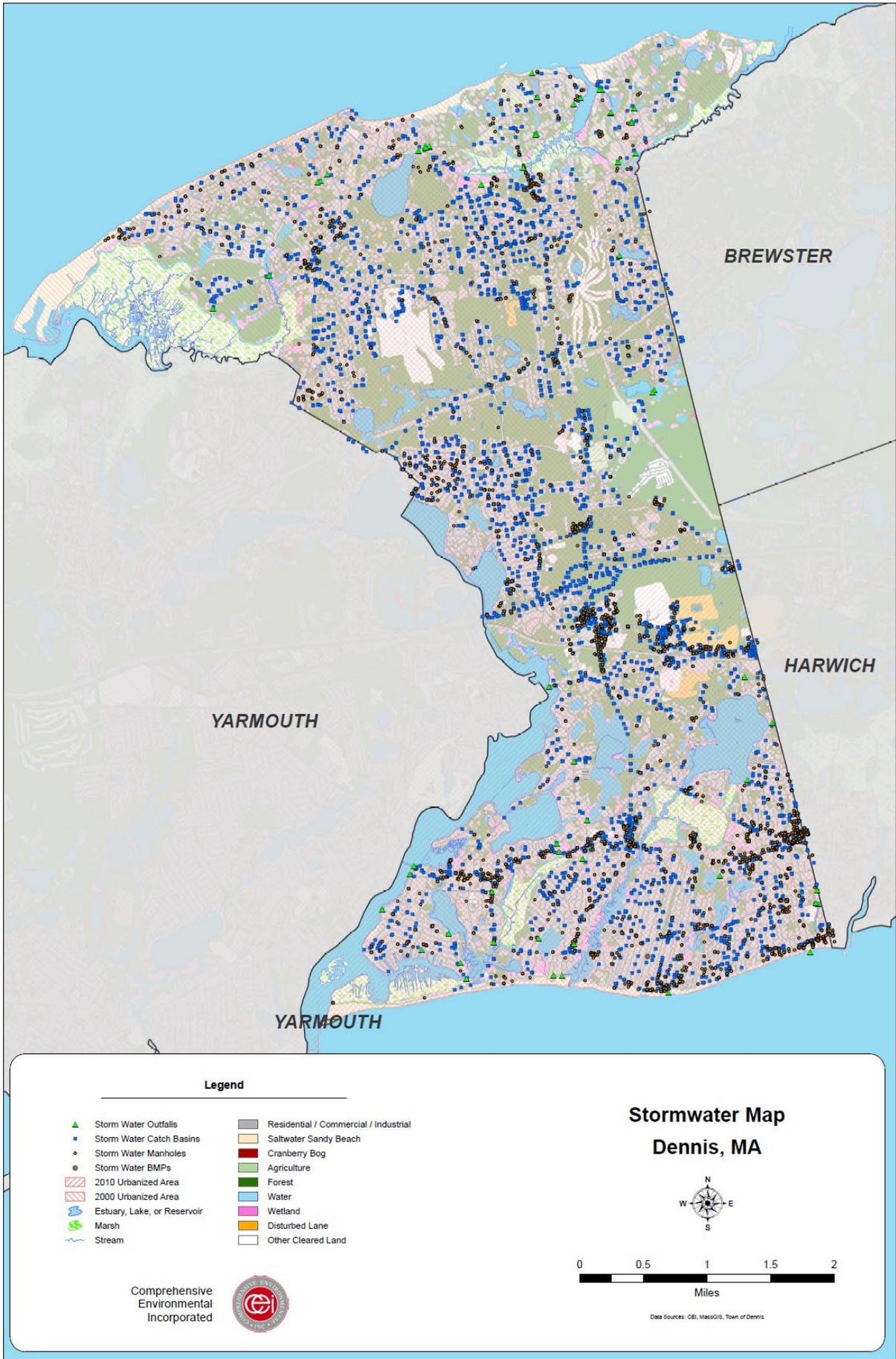
All catch basins will be inspected and cleaned following the standard operating procedures (SOP) provided in **Appendix B**.

4.3 Catch Basin Cleanings Storage and Disposal

Dennis currently stores catch basin cleanings a transfer station and it is eventually disposed of at a landfill. The Town will explore possible beneficial uses for its collected catch basin cleanings.

Appendix A

Map of Drainage Infrastructure



Appendix B

Standard Operating Procedures for Catch Basin Cleaning and Inspection

Permit Requirements

As required by the 2016 MS4 Permit, catch basin inspection and cleaning requirements include the following:

- **Inspect and clean catch basins** to ensure that no catch basin is not more than 50 percent full;
- **Prioritize inspection and maintenance** for catch basins:
 - located near construction activities;
 - discharging to impaired waters; and
 - with sumps more than 50% full during consecutive inspections.
- **Establish proper documentation** of catch basin inspections; and
- **Develop an optimization plan** for catch basin cleaning and inspection.

Before Cleaning and/or Inspection

- **Notify residents and business** of catch basin cleaning schedule to restrict parking that could obstruct catch basin cleaning operations.
- **Gather** all required forms and maps.
 - Catch Basin Inspection Form; and
 - Maps of area to be cleaned/inspected

Cleaning and Inspection during Cleaning

1. Clean sediment and trash off of grate.
2. Remove grate.
3. Fill out **Catch Basin Inspection Form** with basin-specific information:
 - **Before cleaning:**
 - Do a visual inspection of outside of grate.
 - Do a visual inspection of the inside of the catch basin to determine cleaning needs and structural issues.
 - Measure depth from rim of catch basin to top of sediment.
 - Measure depth from rim of catch basin to the top of the outlet pipe.
 - Take photo of catch basin.
 - **Clean catch basin:**
 - For manual removal, place removed material in a location protected from potential runoff and place cleanings in a vehicle for transport to designated disposal area.
 - OR use a high-powered vac truck to remove sediment.
 - **After cleaning:**

- Measure depth from rim to bottom of catch basin.
 - Measure depth of sump (outlet pipe to bottom of catch basin).
 - Note if the catch basin is more than 50% full with sediment.
 - Note if the catch basin requires maintenance or if there are pollutants present.
 - Take photo of catch basin.
4. **Storage:** Bring cleanings to designated location at the transfer station for storage and disposal.
 5. If any illicit discharges are observed or suspected, notify supervisor.

Interim Inspection between Cleaning Cycles

1. Clean sediment and trash off grate.
2. Remove grate.
3. Fill out **Catch Basin Inspection Form** with basin-specific information:
 - Do a visual inspection of outside of grate.
 - Do a visual inspection of the inside of the catch basin to determine cleaning needs and structural issues.
 - Measure depth from rim of catch basin to top of sediment.
 - Using sump depth collected during previous cleaning, note if the catch basin is more than 50% full with sediment.
 - Note if the catch basin requires maintenance or if there are pollutants present.
4. If any illicit discharges are observed or suspected, notify supervisor.

Catch Basin Inspection Form

Inspection Information									
Catch Basin ID									
Street Location		GPS Location							
Inspector's Name									
Date of Inspection		Time of Inspection							
Weather (circle)	Dry	Light Rain	Heavy Rain Snow						
Catch Basin Information									
Location	Surface Type	Grate							
<input type="checkbox"/> Road/Curb <input type="checkbox"/> Alley <input type="checkbox"/> Ditch <input type="checkbox"/> Parking Lot <input type="checkbox"/> Driveway <input type="checkbox"/> Sidewalk Other: _____	<input type="checkbox"/> Asphalt <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Grass/Dirt Other: _____	____ inches x ____ inches Material: _____ Shape: _____							
Catch Basin Condition									
CB Damage: No Yes	Comment:								
	Materials (circle)			Condition (circle)					
Grate	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Frame	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Chimney	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Walls	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Trap/Hood	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Sump	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Sediment Depth and IDDE (inches)									
A. Depth from Rim to Top of Sediment: _____						Check those Present:			
B. Depth from Rim to Bottom of Basin (after vac): _____						__ Sanitary Waste/Smell			
C. Sump Depth: _____						__ Excessive Sediment			
D. Depth of Sediment (B-A): _____						__ Oil Sheen			
E. More than 50% Full of Sediment? (D/C): _____						__ Floatables/Trash			
						__ Pet Waste:			
CB Cleaned? No Yes						Other: _____			
Suspected illicit discharge? No Yes						Potential Source: _____			

Appendix G

SWPPP Facilities



NPDES MS4 SWPPP COMPLIANCE

TO: Mr. Thomas Andrade, Town Engineer, Town of Dennis
FROM: Mr. Nick Cristofori P.E.
DATE: April 6, 2020
SUBJECT: NPDES MS4 SWPPP Compliance

Background

Under the Environmental Protection Agency’s (EPA’s) 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, regulated communities such as Dennis are required to prepare Stormwater Pollution Prevention Plans (SWPPPs) for the following permittee-owned or operated facilities if they discharge stormwater to the regulated MS4 and/or surface water:

- Maintenance garages;
- Public works yards;
- Transfer stations; and
- Other waste handling facilities where pollutants are exposed to stormwater as determined by the permittee.

In response, Comprehensive Environmental Inc. (CEI) and the Town developed a list of town-owned facilities that may require SWPPP preparation, identified as the following:

Table 1 – Potential SWPPP Facilities

Facility Name	Address	Map/Lot	Location Comments
DPW Facility	120 Theophilis Smith Road	165-1	Located on same parcel
Transfer Station	100 Theophilis Smith Road		

The above facilities do not necessarily require preparation of a SWPPP, depending on where they are located and where stormwater is discharged from the site. Of note from the permit:

- “If the small MS4 is not located entirely within an urbanized area, only the portion of the MS4 that is located within the urbanized area [as per the most recent decennial census data] is regulated...”; and
- “A small municipal separate storm sewer system means all separate storm sewers that are: owned or operated by the... town... having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes... that discharges to waters of the United States.”

Per the above paraphrased permit language, only areas located both within a community’s regulated area and that discharge to waters of the United States are regulated under the permit and thus require preparation of SWPPPs. Nearly all of Dennis is located with the regulated urbanized area with the exception of a small area located along the border with Brewster and Harwich just north of Route 6 and beach areas along the immediate coast. However, Dennis’



NPDES MS4 SWPPP COMPLIANCE

MS4 drainage system is very fragmented largely due to the extensive permeable sandy soils throughout the area typical of most Cape Cod communities. The Town has installed extensive leaching catch basins, galleys, and similar drainage features that infiltrate stormwater locally rather than discharging into waters of the United States. The extensive use of isolated leaching structures means that relatively little MS4 drainage infrastructure flows to waters of the United States, and that potentially regulated SWPPP facilities must be investigated at a parcel level to determine whether or not they flow to a water of the United States.

Desktop and Field Investigations

CEI first started with a desktop exercise of locating both facilities identified in Table 1 and overlaying known drainage infrastructure with waterbody information available through GIS. Once complete, CEI then completed a brief evaluation of each facility on January 16, 2020 to observe drainage patterns, stormwater destinations, and other relevant site-specific characteristics. Both field days were dry with preceding days also dry. The following provides a brief summary of observations for each facility and area.

DPW Facility

The Department of Public Works (DPW) Facility serves as the DPW's office building and primary storage area for DPW vehicles and materials. The facility consists of an offices and garage at the front (southern) end of the site, contains a salt shed located at the rear of the property to the east, and a large material storage area to the north. It is generally bordered by heavily wooded areas to the east and north, the Transfer Station to the west, a commercial restaurant to the southwest, and a commercial construction yard to the south. Note that the DPW Yard, Transfer Station, and old landfill are all located on one parcel. Additionally, this facility is the anticipated location of a future regional wastewater treatment facility that will serve Dennis and portions of several surrounding towns. It is anticipated that the WWTF will be located at the eastern end of this site within the existing material staging area.

The majority of stormwater runoff within the vicinity of the DPW offices and garage is collected via a series of catch basins and manholes and discharge to a retention basin located between the DPW building and material storage area to the north. This basin has no outlet and any excess stormwater will pond onsite and infiltrate into the ground. Additional runoff flows via sheet flow and/or shallow surface flow to localized low spots where it infiltrates into the ground. As this area serves primarily as an office area and indoor garage with vehicles and equipment, there are very few sources of pollution exposed to stormwater.

The salt shed is located on a pervious area, albeit likely compacted from heavy truck traffic, and any runoff from this area will infiltrate into the ground or gently sheet flow off into the surrounding wooded areas. A small unnamed pond is located approximately 500-feet to the southeast through a wooded area, however, will never receive runoff from this facility because of both the distance and lack of a closed drainage system draining towards it.

Similar to the salt shed, the material staging area is entirely pervious, albeit likely compacted from heavy truck traffic, any runoff from this area will infiltrate into the ground or gently sheet flow off into the surrounding forested areas. Eagle Pond is located approximately 400-feet due



NPDES MS4 SWPPP COMPLIANCE

north through a heavily wooded area, however, will never receive runoff from the DPW Facility because of both the distance and lack of a closed drainage system draining towards it. Within the center of the DPW material staging area is a small pond surrounded by a buffer of trees on all sides approximately 150-feet wide. This pond was in existence prior to developing the surrounding DPW material storage area, and the pond with vegetated buffer was left intact to preserve this environmental resource. The treed buffer is located on a hillside approximately twenty feet high that prevents any runoff from entering the pond, fully isolating this area from stormwater runoff. As noted previously, no stormwater runoff will enter the unnamed pond at the center of the material staging area.

Upon review of this facility, there are no waters of the United States that will receive stormwater runoff during any conditions and thus stormwater discharges do not flow to a regulated MS4 area. Therefore, this facility does not require preparation of a SWPPP.

Transfer Station

The Transfer Station provides the Town of Dennis with a location for disposal of waste and recyclable materials. The residential drop off area generally consists of a paved perimeter road around a series of open roll-off dumpsters for material disposal at the center of the site. Areas to the immediate north and east of the residential drop-off area are for town use only and includes a small garage area, dumpsters storage, and storage areas for other miscellaneous equipment and vehicles. This facility is bordered by the DPW facility to the east, a wooded area to the north, the old landfill to the west, and commercial areas to the south. Note that the Transfer Station, DPW Yard, and old landfill are all located on one parcel.

The majority of stormwater runoff from the Transfer Station facility discharges to a pair of retention basins located onsite. A large retention basin near the center of the facility receives runoff via a series of catch basins and manholes from the residential drop-off roadway, access roadway, roll-off dumpsters, and small onsite garage building. A second retention basin along the northern edge of the facility receives runoff via a series of catch basins, as well as a swale from material storage areas near the northwest corner of the site. Both basins have no outlet and all runoff is infiltrated into the ground. Additional runoff flows via sheet flow and/or shallow surface flow to localized low spots or leaching structures where it infiltrates into the ground. This facility has a number of potential pollutant sources exposed to precipitation, such as material stockpiles, vehicles and equipment, solid waste and recyclable storage, etc. However, all runoff is retained onsite and infiltrates into the ground.

Upon review of this facility, there are no waters of the United States that will receive stormwater runoff during any conditions and thus stormwater discharges do not flow to a regulated MS4 area. Therefore, this facility does not require preparation of a SWPPP.

Conclusions and Recommendations

Based on results of desktop and field investigations completed by CEI on both locations identified in Table 1, neither facility require preparation of a SWPPP as they do not ultimately discharge to waters of the United States via a regulated MS4 connection. Facilities instead should have applicable O&M procedures and Standard Operating Procedures (SOPs) prepared and available for relevant activities at each location to help minimize potential pollution to other



NPDES MS4 SWPPP COMPLIANCE

4

surface or subsurface locations. Should drainage at any of these facilities be altered or changed in the future, applicable facilities should be reevaluated for potential discharges to waters of the United States.

If you have any further questions or would like additional information, please feel free to contact me at 800.725.2550 x303 or ncristofori@ceiengineers.com. Thank you.

Nick Cristofori, P.E.
Principal, Project Manager

Attachments:

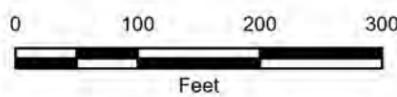
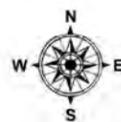
- Facility Maps



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

-  Outfalls
-  Catch Basins
-  Manholes
-  Drainage Pipes
-  Swales
-  Retention Basins
-  Contours (ft.)
-  Parcels
- DEP Wetlands (2005):**
-  Open Water



Data Sources: CEI, MassGIS, Town of Dennis

**DPW and Landfill Drainage Map
for SWPPP Compliance**

Dennis, MA

Comprehensive
Environmental
Incorporated



Appendix H

List of Stormwater BMPs



STORMWATER INSPECTION REPORT

To: Mr. Thomas Andrade, P.E.

From: Nick Cristofori, P.E., Comprehensive Environmental Inc.

Date: June 8, 2020

Locations: West Sesuit Parking lot, East Sesuit Parking Lot, Airline Rd, Fallins Pond Rd, Old Fish House Rd, Seaview Park, Clipper Ln, Baxter St, Trodding Park Ln, Lower County Rd, West Dennis Beach, Bass River Park, Aunt Julia Ann Rd, Lone Rd, Beaten Rd, and the Quiver Dr & Cedar Hill Rd Neighborhood.

Town: Dennis, MA

Inspectors: Chris McGuinness of CEI

Inspection Dates: May 26, 2020

Under the Environmental Protection Agency’s (EPA’s) 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, regulated communities such as Dennis are required to annually inspect stormwater Best Management Practices (BMPs) within the regulated Urbanized Area (UA) and maintain as needed. In response, Comprehensive Environmental Inc. (CEI) performed an inspection of stormwater BMPs at the identified locations on May 26, 2020 to evaluate the condition and document recommended maintenance items for follow-up action in order to meet permit requirements.

Inspections

The Town of Dennis identified 16 BMP sites/locations with 19 individual BMPs required inspections in order to meet permit requirements. Note that 16 individual BMPs were previously inspected on October 1, 2019, and three new BMPs were located and inspected this year. BMP locations are identified street name and approximate location on the roadway. For summary purposes, Table 1 below details the locations and individual BMPs that were inspected, while Table 2 details maintenance recommendations for BMPs requiring attention. BMP inspection results are detailed in the attached inspection sheet attached to this report, along with representative photo documentation. All BMPs were located except for one raingarden on Aunt Julia Ann’s landing.

At the time of the inspections, weather was approximately 70 degrees and sunny. Weather over a three-day period leading up to May 26th was 70 degrees and clear. Chris McGuinness of CEI inspected the following infrastructure, and noted the following general condition and maintenance needs:

Table 1 – Stormwater Infrastructure Inspected

BMP ID	Location	Stormwater BMP Type	Overall Condition	Requires Maintenance
West Sesuit Parking Lot, South End	Across from Highland Road	Detention Basin	Good	No



STORMWATER INSPECTION REPORT

Table 1 (continued) – Stormwater Infrastructure Inspected

BMP	Location	Stormwater BMP Type	Overall Condition	Requires Maintenance
West Sesuit Parking Lot, Northeast End	Behind Albatross Fishing	Detention Basin	Poor	Yes (Major)
East Sesuit Parking Lot	In the parking lot	Detention Basin & Forebay	Poor	Yes (Major)
Airline Road	#701 Airline Road	Underground System	Good	No
Fallins Pond Road	Across from #22 Fallins Pond Road	Rain Garden	Fair	Yes (Minor)
Old Fish House Road	Near #56-60 Old Fish House Road	Rain Garden	Poor	Yes (Major)
Seaview Park	475 Lower County Road	Detention Basin	Fair	Yes (Minor)
Clipper Lane	#73 Clipper Lane	Underground System	Fair	No
Baxter Street	Across from #20	Detention Basin	Fair	No
Trodding Park Lane	In front of #10	Porous Pavement	Poor	Yes (Minor)
Lower County Road	Near 126 Lower County Road	Detention Basin	Poor	Yes (Major)
West Dennis Beach #1	On Eastside of beach office	Rain Garden	Good	No
West Dennis Beach #2	On North side of beach office	Rain Garden	Poor	Yes (Major)
Bass River Park	Next to kayak rental building	Rain Garden	Poor	Yes (Major)
Aunt Julia Ann Road	Near #48 Aunt Julia Ann Road	Settling Area	Good	No
North Lone Rd	Along the side of the road	Drainage Swale to Leaching Catch Basin	Good	No
South Lone Rd	Along the side of the road	Leaching catch Basin	Fair	No
Beaten Rd	In Front of house 33	Leaching Catch Basins	Poor	Yes (Minor)
Quiver Dr & Cedar Hill Rd	Entire Neighborhood	Apparent Porous Pavement	Good	No
Aunt Julia Ann's Landing	-	Raingarden	-	-



STORMWATER INSPECTION REPORT

Recommendations

As noted previously, the inspected BMPs are all located within the regulated UA or discharge to waters of the United States. The majority of BMPs that were inspected were functioning properly due in part to the inherent drainage capabilities of the native sandy soil, however, approximately half require either minor or major maintenance. Minor maintenance might include removal of plant material buildup, sediment vacuuming, trimming back or removal of vegetation, curb or edge of road maintenance, and general landscaping. Major maintenance issues were those requiring heavy equipment, higher costs, earthwork, and/or a combination of different minor factors that decreased the effectiveness of BMP. Several observed BMPs exhibited evidence of degradation over the past year, and now require major maintenance rather than minor. Major maintenance should be completed as soon as possible to prevent worsening condition and failure of BMPs, while minor maintenance should be performed during the current growing season to prevent further degradation.

BMPs listed in Table 2 below require maintenance due to reduced performance and functionality. Based on CEI’s inspections, the following items are recommended for additional follow-up action:

Table 2 – BMP Maintenance Recommendations

BMP ID / Location	Recommendations
West Sesuit Parking Lot, Northeast End	Repair headwall so it does not block the inlet pipe. The HDPE flared end of pipe should be reattached. Remove sediment from the manhole and catch basin. Sediment has accumulated on top of outlet pipe which may indicate the outlet is consistently being submerged during rain events or that erosion is occurring.
East Sesuit Parking Lot	A low area in center of the parking lot is causing ponding and it is recommended that the area either be regraded or a catch basin be installed to alleviate flooding. Invasive phragmites should be removed from the area according Massachusetts Department of Environmental Protection (MassDEP) standard procedures. The sediment transport out of the forebay and in from the side slopes of the outlet pipe is substantial, and it is recommended that riprap be applied to side slopes near outlet pipe stabilize the area.
Fallins Pond Road	The same path identified last year from foot traffic was observed but with more plant growth which indicates that the area may be naturally stabilizing. Sediment has begun to slough off on the sides into the basin of the rain garden. Sediment migration into the low point of the BMP can be slowed by deterring future foot traffic during this vacation season. The rain garden sign at Old Fish House Rd seems to have had an effect in preserving the vegetation, and CEI recommends installing a similar sign to Old Fish House Rd or a barrier to access.
Old Fish House Rd	Dead vegetation buildup within the BMP low point has decreased stormwater storage capacity. Runoff appears to consistently overtop the rain garden storage basin before soil and vegetation uptake occurs. Channelization is occurring on the gravel/crushed stone transition from the road to the beach. Road runoff is traveling overland on the beach and into the bay. CEI recommends filling stormwater channel with riprap to reduce erosive potential. It is also recommended that the town clean out the rain garden storage basin to increase stormwater storage capacity.



STORMWATER INSPECTION REPORT

Table 2 (continued) – BMP Maintenance Recommendations

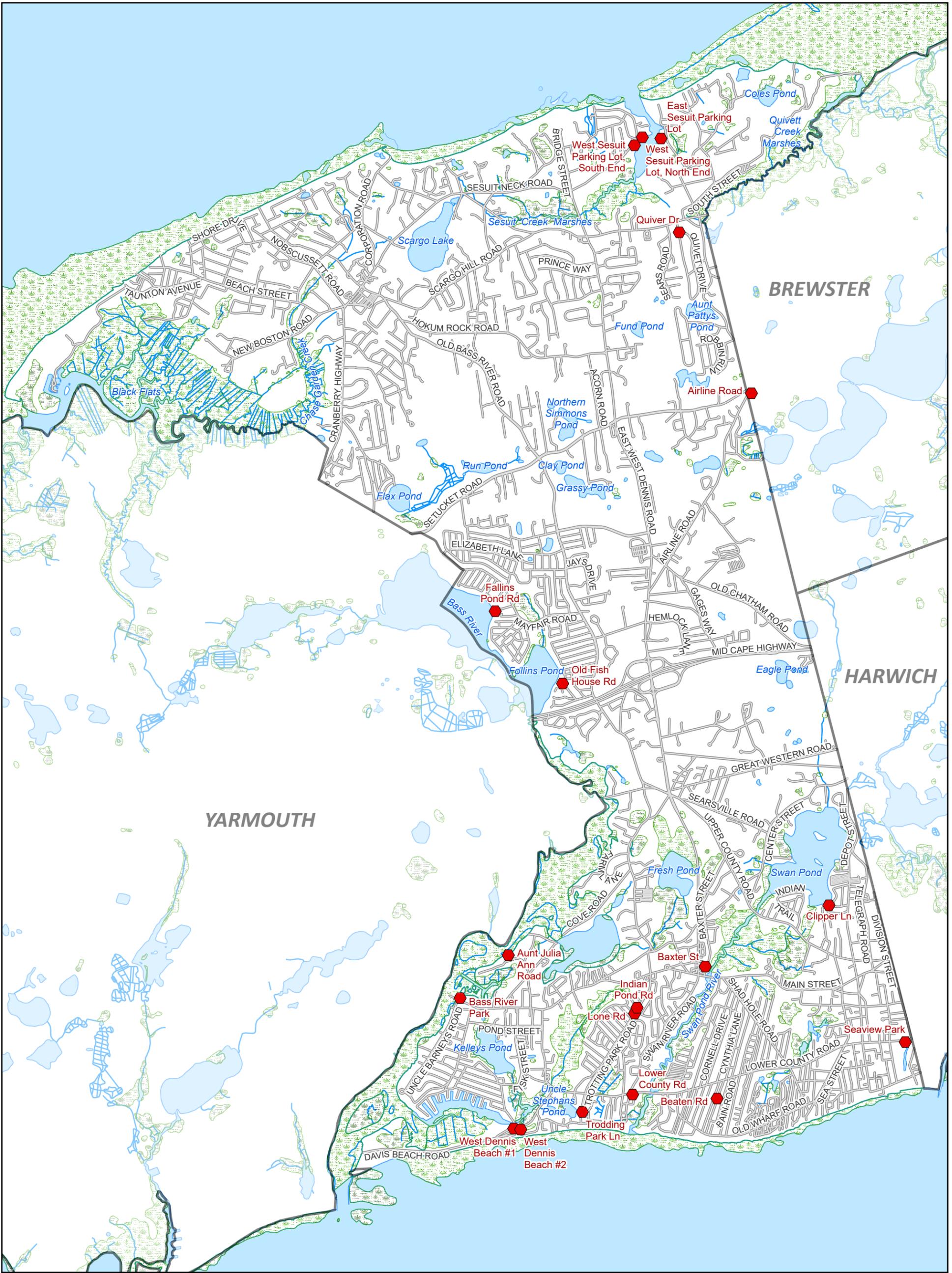
BMP Location	Recommendations
Seaview Park	Woody vegetation is inhibiting overland flow into the basin. Sediment is sloughing off the side slopes near the road and into the basin. CEI recommends installing riprap on slope to stabilizing the basin. Routine vegetation clearing along western edge of basin and at outlet is also recommended.
Trodding Park Lane	It appears that blowing sand has accumulated within the porous pavement voids, potentially impacting functionality. Weather was dry at the time of inspection, CEI could not verify whether the pavement was infiltrating stormwater as designed. CEI recommends The Town create a vacuuming plan for the porous pavement BMPs to ensure routine cleaning is performed.
Lower County Road	The inlet coming from Polticky Road is clogged with debris and should be cleaned. A silt sack is present within the outlet structure and has completely filled with debris; both should be removed. Flow is inhibited in outlet structure and within the BMP due to excess vegetation accumulation and downed trees, which should be removed. Invasive phragmites should be removed from the area according MassDEP standard procedures. A thick layer of green biological growth has formed on top of the water's surface at this BMP, indicating poor flushing and drainage. It is recommended that dead vegetation, blockages, and trash be removed to increase capacity and improve functionality.
West Dennis Beach #2	The rain garden has filled with sand and has lost approximately 50% of its storage capacity. The vegetation within the basin is dead and dying. CEI recommends excavation to increase capacity and replanting vegetation to increase stability of the side slopes.
Bass River Park	The rain garden appears to be sparsely vegetated and populated largely by weeds. Material from the walking path is being washed into the depression and has worsened from last year's inspection. Erosion is present along the embankments which should be stabilized either by seeding new vegetation or stone. Minor debris was observed on the outlet structure and should be removed. CEI recommends rehabilitating this area by removing weeds, adding fresh bioretention soil mix, and otherwise stabilizing the path.
Beaten Rd	The leaching catch basins are filled with cloudy discolored water which indicates they are no longer leaching properly. Evidence of heavy sediment transport into the catch basins from runoff was also noted. CEI recommends vacuuming out sediment to restore the capacity of both of structures. If leaching capacity does not improve, structures should be excavated and replaced.

If you have any further questions or would like additional information, please feel free to contact me at 800.725.2550 x303 or ncristofori@ceiengineers.com. Thank you.

Nick Cristofori, P.E.
Principal, Project Manager

Attachments:

- Stormwater inspection reports and photograph



Legend

- ◆ Stormwater BMP
- Roads
- Lake, Pond, Reservoir
- Wetland, Marsh, Swamp
- Stream, Brook



Stormwater BMP Map

Dennis, MA



Data Sources: MassGIS, Town of Dennis, CEI



STORMWATER BMP INSPECTION REPORT

To: Mr. Thomas Andrade, P.E.

From: Nick Cristofori, P.E., Comprehensive Environmental Inc.

Date: June 30, 2021
West Sesuit Parking lot, East Sesuit Parking Lot, Airline Rd, Fallins Pond Rd, Old Fish House Rd, Seaview Park, Clipper Ln, Baxter St, Trotting Park Ln, Lower County Rd, West Dennis Beach, Bass River Park, Aunt Julia Ann Rd, Lone Rd, Beaten Rd, and the Quiver Dr & Cedar Hill Rd Neighborhood.

Locations: Dennis, MA

Town: Dennis, MA

Inspectors: Chris McGuinness of CEI

Inspection Dates: May 27th & June 8th, 2021

Under the Environmental Protection Agency's (EPA's) 2016 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, regulated communities such as Dennis are required to annually inspect stormwater Best Management Practices (BMPs) within the regulated Urbanized Area (UA) and maintain as needed. In response, Comprehensive Environmental Inc. (CEI) performed an inspection of stormwater BMPs at the identified locations on May 27th & June 8th, 2021 to evaluate the general condition of the BMPs and document recommended maintenance items for follow-up action in order to meet permit requirements.

Inspections

The Town of Dennis identified 19 BMP sites/locations that required inspections in order to meet permit requirements. BMP locations are identified street name and approximate location on the roadway. BMP inspection results are detailed in the attached inspection sheets attached to this report, along with representative photo documentation. All BMPs were located and inspected.

The May 27th inspections occurred at the following locations: 1, 2, 3, 5, 6, 8, 14, 16, 17, and 19. The June 8th inspections occurred at the following locations: 4, 7, 9, 10, 11, 12, 13, 15 and 18. At the time of the inspections, weather was approximately 70 degrees and sunny. Weather over a three-day period leading up to both May 27th and June 8th was dry. Chris McGuinness of CEI inspected the following infrastructure:



STORMWATER BMP INSPECTION REPORT

Table 1 – Stormwater Infrastructure Inspected

BMP ID #	Location Designation	Stormwater BMP Type	Functional Condition	Structural Condition	Requires Maintenance
1	<u>West Sesuit Parking Lot:</u> at south end	Detention Basin	Good	Good	No
2	<u>West Sesuit Parking Lot:</u> on northeast end	Detention Basin	Fair	Poor	Yes (Major)
3	<u>East Sesuit Parking Lot</u>	Detention Basin & Forebay	Poor	Fair	Yes (Major)
4	<u>Airline Road:</u> in front of #701	Underground System	Fair	Good	No
5	<u>Fallins Pond Road:</u> near the boat launch	Rain Garden	Fair	Fair	No
6	<u>Old Fish House Road:</u> near #56-60	Rain Garden	Good	Poor	No
7	<u>Seaview Park: #475</u> Lower County Road	Detention Basin	Fair	Poor	Yes (Major)
8	<u>Baxter Street:</u> across from #20	Detention Basin	Fair	Poor	Yes (Major)
9	<u>Trotting Park Road:</u> in front of #10	Porous Pavement	Poor	Fair	Yes (Major)
10	<u>Lower County Road:</u> near #126	Detention Basin	Good	Poor	Yes (Minor)
11	<u>West Dennis Beach #1:</u> north of beach office	Rain Garden	Good	Good	No
12	<u>West Dennis Beach #2:</u> east of beach office	Settling area	Poor	Good	Yes (Minor)
13	<u>Bass River Park:</u> near kayak rental	Rain Garden	Good	Good	No
14	<u>Aunt Julia Ann Road:</u> near #48	Settling Area	Poor	Fair	Yes (Major)
15	<u>Clipper Lane:</u> near #73	Underground System	Poor	Good	Yes (Minor)
16	<u>Lohr Road:</u> at Trotting Park Road	Underground System	Good	Good	No
17	<u>Indian Pond Road:</u> at Trotting Park Road	Underground System	Poor	Good	Yes (Minor)
18	<u>Beaten Road:</u> near #33	Underground System	Fair	Good	No
19	<u>Quivet Dr:</u> near #5	Underground System	Poor	Good	Yes (Minor)



STORMWATER BMP INSPECTION REPORT

Recommendations

As noted previously, the inspected BMPs are all located within the regulated UA or discharge to waters of the United States. The majority of BMPs that were inspected were functioning properly due in part to the inherent drainage capabilities of the native sandy soil, however, approximately half require either minor or major maintenance. Minor maintenance might include removal of plant material buildup, sediment vacuuming, trimming back or removal of vegetation, curb or edge of road maintenance, and general landscaping. Major maintenance issues were those requiring heavy equipment, higher costs, earthwork, and/or a combination of different minor factors that decreased the effectiveness of BMP. Major maintenance should be completed as soon as possible to prevent worsening condition and failure of BMPs, while minor maintenance should be performed during the current growing season to prevent further degradation.

BMPs listed in Table 2 below require maintenance due to reduced performance and functionality. Based on CEI's inspections, the following items are recommended for additional follow-up action:

Table 2 – BMP Maintenance Recommendations

BMP ID #	Recommendations
2 (Major)	Repair headwall so it does not block the inlet pipe. The HDPE flared end of pipe should be reattached. Remove sediment from the manhole and catch basin. Sediment has accumulated on top of outlet pipe which indicates the outlet is consistently being submerged during rain events.
3 (Major)	A low area in center of the parking lot is causing ponding and it is recommended that the area either be regraded and repaved, or a catch basin be installed to alleviate flooding. Ponding may occur less frequently if the sediment at the inlet to the forebay and within the forebay was removed. CEI recommends applying riprap to side slopes near outlet pipe stabilize the area and avoid erosion
7 (Major)	Erosion on the side slope should be stabilized through seeding and/or erosion control fabric. Basin is full of water, which was not noted in previous inspections, possibly because of a clogged outlet and/or sedimentation preventing infiltration into the subsurface. CEI recommends stabilization and vegetation removal at outlet and outlet channel. If standing water persists, CEI recommends removing sediment from the basin and/or scarifying the bottom of standing water remains.
8 (Major)	Erosion on side slopes has caused one tree to fall into detention area and may cause others to fall as well. Side slope erosion into the basin has filled in some storage capacity. Erosion on the side slope should be stabilized through seeding and/or erosion control fabric. The existing conveyance is stone and is in good shape. However, regrading this conveyance may help it collect more stormwater from the roadway.



STORMWATER BMP INSPECTION REPORT

Table 2 (Continued) – BMP Maintenance Recommendations

BMP ID / Location	Recommendations
9 (Major)	Trotting Park Rd Porous pavement voids have been filled with sediment/sand and it is likely that limited treatment is occurring. Weather was dry at the time of inspection, CEI could not verify whether the pavement was infiltrating stormwater as designed. CEI recommends the Town vacuum out sediment from the porous pavement. The average useful life of porous pavement is 1-2 years without regular cleaning (indefinite with regular cleaning, 3-4 times a year). While not recommended for larger stretches of pavement, power washing is a viable way to clean the pores and more affordable/accessible.
10 (Minor)	A silt sack is present within the outlet structure and has completely filled with debris. Flow to the overflow structure is severely inhibited due to excess vegetation accumulation and downed trees at the outlet, which should be removed. This BMP has improved from last year, however CEI still recommends clearing all blockages from the outlet structure.
12 (Minor)	The settling area has inlet has accumulated enough sediment/sand to effectively block entrance of stormwater and divert it towards the roundabout. The infiltration stone area is in good condition. CEI recommends removing sediment at the inlet to restore effectiveness of the BMP.
14 (Major)	At the end of Aunt Julia Ann Road, the pavement transitions into a gravel parking lot. Sediment buildup at the curb cut for the BMP has grown vegetation. The sediment and vegetation are creating a berm that prevents stormwater from entering the BMP. In large storms this will cause channeling in the gravel parking lot and eventual erosion into the bay or ponding of stormwater in the parking lot. CEI recommends removing the sediment and vegetation and also deepening the curb cut to the BMP. By deepening the curb cut, the BMP will be able to accumulate more sediment before needing maintenance.
15 (Minor)	The underground stormwater detention galleys in this location seem to be in good condition and there is no blockage at the outlet. However, there has always been water in the galleys in all inspections, so groundwater intrusion appears likely. The upstream catch basin has 18 vertical inches of sediment in it and 13 vertical inches from the top of sediment to the hooded outlet to the galleys. More than half of the effective sediment storage is used. CEI recommends removal of sediment from the catch basin to restore capacity.
17 (Minor)	The underground system appears to be a leaching catch basin, but a bottom could not be identified to confirm. Sediment is 8 vertical inches below the outlet hood. CEI recommends removal of sediment from the catch basin to restore capacity.
19 (Minor)	The underground system appears to be a leaching catch basin, but a bottom could not be identified to confirm. Sediment has built up to the outlet hood. CEI recommends removal of sediment from the catch basin to restore capacity.



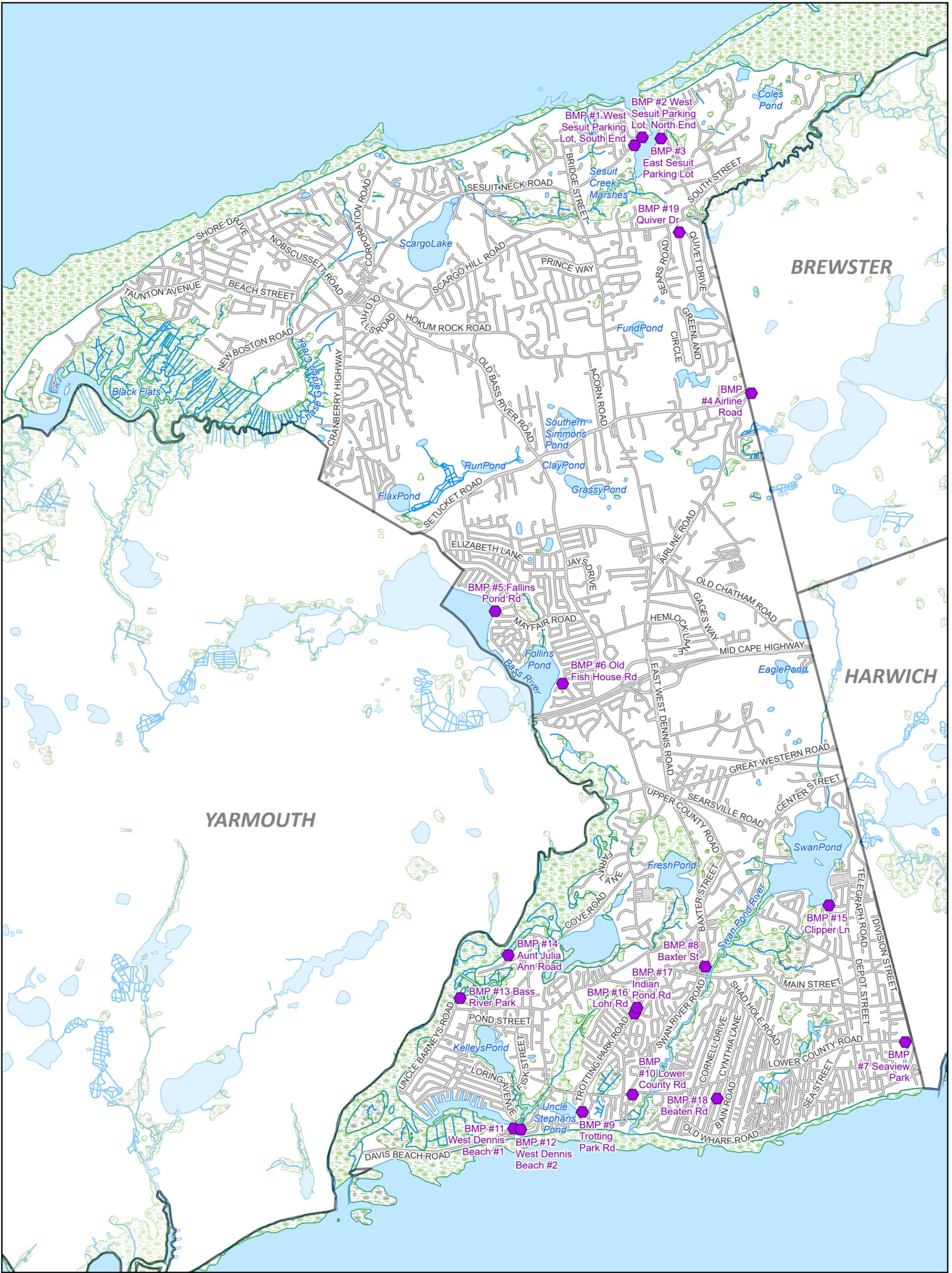
STORMWATER BMP INSPECTION REPORT

If you have any further questions or would like additional information, please feel free to contact me at 800.725.2550 x303 or ncristofori@ceiengineers.com. Thank you.

Nick Cristofori, P.E.
Principal, Project Manager

Attachments:

- BMP location map
- Stormwater inspection forms with photographs



Legend

-  Stormwater BMP
-  Roads
-  Lake, Pond, Reservoir
-  Wetland, Marsh, Swamp
-  Stream, Brook



Stormwater BMP Map

Dennis, MA



Data Sources: MassGIS, Town of Dennis, CEI

Appendix I

Annual Reports

Year 1 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: May 1, 2018-June 30, 2019

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

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed.

Part I: Contact Information

Name of Municipality or Organization:

EPA NPDES Permit Number:

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:

Stormwater Management Program (SWMP) Information

SWMP Location (web address):

Date SWMP was Last Updated:

If the SWMP is not available on the web please provide the physical address and an explanation of why it is not posted on the web:

Part II: Self Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4.

Impairment(s)

Bacteria/Pathogens Chloride Nitrogen Phosphorus
 Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State: Assabet River Phosphorus Bacteria and Pathogen Cape Cod Nitrogen
 Charles River Watershed Phosphorus Lake and Pond Phosphorus

Out of State: Bacteria/Pathogens Metals Nitrogen Phosphorus

Clear Impairments and TMDLs

*Next, check off all requirements below that have been completed. **By checking each box you are certifying that you have completed that permit requirement fully.** If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.*

Year 1 Requirements

- Develop and begin public education and outreach program
- Identify and develop inventory of all known locations where SSOs have discharged to the MS4 in the last 5 years
 - The SSO inventory is attached to the email submission
 - The SSO inventory can be found at the following website:

N/A, no sanitary sewer system
- Develop written IDDE plan including a procedure for screening and sampling outfalls
- IDDE ordinance complete
- Identify each outfall and interconnection discharging from MS4, classify into the relevant category, and priority rank each catchment for investigation
 - The priority ranking of outfalls/interconnections is attached to the email submission
 - The priority ranking of outfalls/interconnections can be found at the following website:

<https://www.town.dennis.ma.us/engineering-department/pages/stormwater-0>; IDDE Plan, Appendix B
- Construction/ Erosion and Sediment Control (ESC) ordinance complete
- Develop written procedures for site inspections and enforcement of sediment and erosion control measures
- Develop written procedures for site plan review
- Keep a log of catch basins cleaned or inspected
- Complete inspection of all stormwater treatment structures

Annual Requirements

- Annual opportunity for public participation in review and implementation of SWMP
- Comply with State Public Notice requirements
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- All curbed roadways have been swept a minimum of one time per year

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- Annual message encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- Permittee or its agents disseminate educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

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

Nitrogen (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- Distribute an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers
- Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

Use the box below to input additional details on any unchecked boxes above or any additional information you would like to share as part of your self assessment:

Public Education and Outreach - The Town has not yet developed a comprehensive stormwater education program, however, this will be done during Year 2. It is anticipated that this program will include a website with audience-specific information provided for download, as well as brochures and fact sheets for distribution in hardcopy. The Town has not yet developed seasonal educational messages for all seasons as required for bacteria water quality limited waterbodies, however, will do so during Year 2.

Stormwater BMP Inspections - The Town developed an inventory of its town-owned stormwater BMPs in September 2019. Inspections are expected to begin during fall of Year 2.

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

Note that the Town has a comprehensive "Stormwater Rules and Regulations" that address nearly all of the MCM4: Construction Site Stormwater Runoff Control requirements, however, it is expected that minor updates will be made during Year 2 in order to incorporate the new requirements outlined under MCM5: Post-Construction Stormwater Management in New Development and Redevelopment.

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

Yes No

If yes, describe below, including any relevant impairments or TMDLs:

As noted in the Town's NOI, Dennis will meet the requirements of part IV of Appendix F (Cape Cod nitrogen TMDL) for the Bass River and Swan River, even though the TMDLs were finalized after the April 4, 2016 MS4 Permit issue date.

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed during the reporting period:

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

BMP: Stormwater pollution is trash, oil/cigarette butts, & dog waste

Message Description and Distribution Method:

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

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

BMP: Stormwater Webpage

Message Description and Distribution Method:

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

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

MCM2: Public Participation

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

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

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

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

Roadside Cleanup - Held an annual townwide cleanup event on April 27, 2019.

Household Hazardous Waste Collection Days – The Town of Dennis sponsors up to 2 household hazardous waste collection days a year to encourage the proper disposal of hazardous materials by its residents.

Wastewater Implementation Committee - Televised the monthly Wastewater Implementation Committee meetings to discuss wastewater and stormwater road runoff.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

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

Number of SSOs identified:

Number of SSOs removed:

Below, report on the total number of SSOs identified in the MS4 system and removed to date. At a minimum, report SSOs identified since 2013.

Total number of SSOs identified:

Total number of SSOs removed:

MS4 System Mapping

Describe the status of your MS4 map, including any progress made during the reporting period:

The Town has mapped the majority of its known stormwater infrastructure, including catch basins, manholes, and outfalls. As new infrastructure is located, it is added to the Town's GIS library. It should be noted that the Town's drainage infrastructure has a substantial number of leaching structures and thus is generally composed of disconnected, small segments.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses.

- The outfall screening data is attached to the email submission
- The outfall screening data can be found at the following website:

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

Number of outfalls screened:

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

Percent of total outfalls screened:

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- The catchment investigation data is attached to the email submission
- The catchment investigation data can be found at the following website:

Below, report on the number of catchment investigations completed during this reporting period.

Number of catchment investigations completed this reporting period:

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

Percent of total catchments investigated:

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

N/A, not yet started

IDDE Progress

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

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

N/A, none found to date

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

Number of illicit discharges identified:

Number of illicit discharges removed:

Estimated volume of sewage removed:

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

Total number of illicit discharges identified:

Total number of illicit discharges removed:

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

N/A, none found to date

Employee Training

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

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

MCM4: Construction Site Stormwater Runoff Control

Below, report on the construction site plan reviews, inspections, and enforcement actions completed during this reporting period.

Number of site plan reviews completed:

Number of inspections completed:

Number of enforcement actions taken:

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

Ordinance Development

Describe the status of the post-construction ordinance required to be complete in year 2 of the permit term:

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

As-built Drawings

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

Under current Zoning regulations, developers are required to submit as-built plans. However, as part of the regulatory updates to be performed during Year 2, procedures for submittal of as-built drawings and long term operation and maintenance will be refined as needed in order to meet permit requirements.

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

N/A, to be completed during future permit years.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

N/A, to be completed during future permit years.

Retrofit Properties Inventory

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

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

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

The Town developed a Catch Basin Cleaning Optimization Plan during Year 1 as a component of its SWMP P.

If complete, attach the catch basin cleaning optimization plan or the schedule to gather information to develop the optimization plan:

- The catch basin cleaning optimization plan or schedule is attached to the email submission
- The catch basin cleaning optimization plan or schedule can be found at the following website:

<https://www.town.dennis.ma.us/engineering-department/pages/stormwater-0>; SWMP Plan, Appendix G

Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins during this reporting period.

Number of catch basins inspected:

Number of catch basins cleaned:

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

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

Total number of catch basins:

If applicable:

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

Not yet applicable, pending collection of a second round of catch basin inspections.

Street Sweeping

Describe the status of the written procedures for sweeping streets and municipal-owned lots:

The Town developed a Street Sweeping Optimization Plan during Year 1 as a component of its SWMP Plan. This consists of a map displaying sweeping requirements throughout the Town and a Standard Operating Procedure (SOP) for completing the sweeping.

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

- Number of miles cleaned:
- Volume of material removed:
- Weight of material removed:

If applicable:

For rural uncurbed roadways with no catch basins, describe the progress of the inspection, documentation, and targeted sweeping plan:

DPW personnel observe all regulated town-owned roadways for maintenance needs, including street sweeping, during routine operations. Personnel also observe known trouble areas, such as projects with large-scale construction projects or projects with substantial land disturbance, for evidence of runoff-laden sediment onto roadways that may require more frequent sweeping in addition to that outlined under the Street Sweeping Optimization Plan. In addition, town residents periodically call the DPW to report localized areas needing sweeping that DPW personnel then visit to inspect. Should areas in need of additional sweeping be observed, the Town documents these areas as part of its Street Sweeping Optimization Plan and schedules areas for sweeping during the next upcoming round. Note that the Town applies no sand to roadways during winter operations, and thus observed sweeping needs are typically minimal. Inspections of rural uncurbed roadways conducted to date have not yet observed any needs for additional sweeping within regulated urbanized area roadways.

Winter Road Maintenance

Describe the status of the written procedures for winter road maintenance including the storage of salt and sand:

The Town developed SOPs for winter road maintenance during Year 1. These SOPs will be included as part of a larger comprehensive Operation and Maintenance (O&M) Plan during Year 2 that covers other facilities and stormwater infrastructure.

Inventory of Permittee-Owned Properties

Describe the status of the inventory, due in year 2 of the permit term, of permittee-owned properties, including parks and open spaces, buildings and facilities, and vehicles and equipment, and include any updates:

The Town is currently developing an inventory of its permittee-owned properties, to be completed by the end of Year 2.

O&M Procedures for Parks and Open Spaces, Buildings and Facilities, and Vehicles and Equipment

Describe the status of the operation and maintenance procedures, due in year 2 of the permit term, of permittee-owned properties (parks and open spaces, buildings and facilities, vehicles and equipment) and include maintenance activities associated with each:

The Town is currently developing O&M Procedures for its Parks and Open Spaces, Buildings and Facilities, and Vehicles and Equipment, to be completed by the end of Year 2.

Stormwater Pollution Prevention Plan (SWPPP)

Describe the status of any SWPPP, due in year 2 of the permit term, for permittee-owned or operated facilities including maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater:

The Town is currently working towards determining whether SWPPPs are required for any town-owned facilities. The Town completed a preliminary review of its facilities during Year 1 and determined that its DPW Garage and transfer station are both located away from areas draining to the MS4. During Year 2, the Town will complete a more comprehensive facility assessment and complete SWPPPs for applicable facilities, if necessary, by the end of Year 2.

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

Number of site inspections completed:

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

N/A, not yet started.

O&M Procedures for Stormwater Treatment Structures

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

Stormwater BMP Inspections - The Town developed an inventory of its town-owned stormwater BMPs in September 2019. BMPs consist of approximately 6 raingardens, 5 detention basins, 3 settling areas, and 1 area of porous pavement. Inspections are expected to begin during fall of Year 2. Once complete, the Town will inspect all regulated stormwater BMPs annually and perform maintenance as needed.

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- Not applicable
- The results from additional reports or studies are attached to the email submission
- The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

N/A, not yet started.

Additional Information

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

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

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 2 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree

- Complete system mapping Phase I
- Begin investigations of catchments associated with Problem Outfalls
- Develop or modify an ordinance or other regulatory mechanism for post-construction stormwater runoff from new development and redevelopment
- Establish and implement written procedures to require the submission of as-built drawings no later than two years after the completion of construction projects
- Develop, if not already developed, written operations and maintenance procedures
- Develop an inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; review annually and update as necessary
- Establish a written program detailing the activities and procedures the permittee will implement so that the MS4 infrastructure is maintained in a timely manner
- Develop and implement a written SWPPP for maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater
- Enclose or cover storage piles of salt or piles containing salt used for deicing or other purposes
- Develop, if not already developed, written procedures for sweeping streets and municipal-owned lots
- Develop, if not already developed, written procedures for winter road maintenance including storage of

salt and sand

- Develop, if not already developed, a schedule for catch basin cleaning
- Develop, if not already developed, a written procedure for stormwater treatment structure maintenance
- Develop a written catchment investigation procedure (*18 months*)

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4 in the last 5 years
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all uncurbed streets at least annually

Provide any additional details on activities planned for permit year 2 below:

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

Part V: Certification of Small MS4 Annual Report 2019

40 CFR 144.32(d) Certification

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

Name: Title:

Signature: Date:

[Signatory may be a duly authorized representative]

Year 2 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2019-June 30, 2020

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

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

Part I: Contact Information

Name of Municipality or Organization:

EPA NPDES Permit Number:

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Stormwater Management Program (SWMP) Information

SWMP Location (web address):

Date SWMP was Last Updated:

If the SWMP is not available on the web please provide the physical address:

Part II: Self-Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4. Make sure you are referring to the most recent EPA approved Section 303(d) Impaired Waters List which can be found here: <https://www.epa.gov/tmdl/region-1-impaired-waters-and-303d-lists-state>

Impairment(s)

Bacteria/Pathogens Chloride Nitrogen Phosphorus
 Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State: Assabet River Phosphorus Bacteria and Pathogen Cape Cod Nitrogen
 Charles River Watershed Phosphorus Lake and Pond Phosphorus

Out of State: Bacteria/Pathogens Metals Nitrogen Phosphorus

Clear Impairments and TMDLs

Next, check off all requirements below that have been completed. **By checking each box you are certifying that you have completed that permit requirement fully.** If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.

Year 2 Requirements

- Completed Phase I of system mapping
- Developed a written catchment investigation procedure and added the procedure to the SWMP
- Developed written procedures to require the submission of as-built drawings and ensure the long term operation and maintenance of completed construction sites and added these procedures to the SWMP
- Enclosed or covered storage piles of salt or piles containing salt used for deicing or other purposes
- Developed written operations and maintenance procedures for parks and open space, buildings and facilities, and vehicles and equipment and added these procedures to the SWMP
- Developed an inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment and added this inventory to the SWMP
- Completed a written program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- Developed written SWPPPs, included in the SWMP, for all of the following permittee owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Phase I mapping - mapping of open channel conveyances and any newly located outfalls is ongoing. Mapping interconnections with other MS4s (e.g. DOT) is ongoing, and it is expected that this will continue as part of DOT's own mapping efforts to be completed under a future TS4 permit.

As-Builts and Long-Term O&M - under current Zoning regulations, developers are required to submit as-built plans. The Town was working during Year 2 to update regulations to incorporate procedures for submittal of as-builts and require long term operation and maintenance for all applicable developments, however, as a result of the COVID-19 outbreak, regulations were not updated as planned during Permit Year 2. The Town now anticipates completing stormwater regulatory updates as part of the Year 3 requirements under EPA's pending updated permit schedule.

SWPPPs - The Town has no standalone maintenance garage or other waste handling facility. The Town's DPW Facility and and Transfer Station are located on adjacent parcels within the urbanized area, however, all stormwater infiltrates onsite. Based on the location of both facilities, underlying pervious soils, and surrounding topography, it has been determined that both facilities will not discharge to the Town's MS4 or a Waterbody of the United States under any conditions. Should future evaluation determine that any facilities drain to the MS4, the Town will prepare a SWPPP(s) as required by the 2016 MS4 Permit.

Annual Requirements

- Provided an opportunity for public participation in review and implementation of SWMP and complied with State Public Notice requirements
- Kept records relating to the permit available for 5 years and made available to the public
- The SSO inventory has been updated, including the status of mitigation and corrective measures implemented
 - This is not applicable because we do not have sanitary sewer
 - This is not applicable because we did not find any new SSOs
 - The updated SSO inventory is attached to the email submission
 - The updated SSO inventory can be found at the following website:

- Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters
- Provided training to employees involved in IDDE program within the reporting period
- All curbed roadways were swept at least once within the reporting period
- Updated outfall and interconnection inventory and priority ranking as needed

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

Outfall Inventory and Ranking - the outfall and interconnection inventory is updated on an ongoing basis as dry weather screening is performed. The priority ranking will be updated after dry weather inspections are completed and before catchment investigations commence.

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- Annual message was distributed encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- Permittee or its agents disseminated educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- Provided information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

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

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

Public Education and Outreach - the Town is part of the statewide ThinkBlue campaign which in part distributes a number of public outreach-related materials throughout the year, including septic system maintenance and pet waste. A message was not distributed to dog owners at the time of license issuance/renewal this year, in part due to COVID-19 forcing the closure of Town Hall for much of the year.

Nitrogen (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- Distributed an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers
- Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

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

Public Education and Outreach - the Town is part of the statewide ThinkBlue campaign which in part distributes a number of public outreach-related materials throughout the year.

Street Sweeping - the Town swept all high traffic areas and areas with windblown sand near beaches two or three times per year. Most other main and secondary roadways, as well as municipal parking lots, were swept once per year.

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

Dry Weather Outfall Screening - The Town attempted to inspect all 60 known stormwater outfalls during dry

weather for potential illicit discharges. Of the 60 known stormwater outfalls that were inspected, 48 were located. 3 outfalls were flowing, however, none exhibited evidence of an illicit discharge. The Town will also attempt to locate and inspect the remaining 12 outfalls for dry weather flows during Year 3.

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

- Yes
- No

If yes, describe below, including any relevant impairments or TMDLs:

The Town has determined it is subject to the following additional TMDL and Impaired Waters requirements:
-Chase Garden Creek (MA96-103), bacteria impaired waters requirements (Appendix H, Part III)

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed during this reporting period:

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

BMP: Stormwater pollution is trash, oil/cigarette butts, & dog waste

Message Description and Distribution Method:

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

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

31,376 social media impressions from Town residents.

Message Date(s):

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

BMP: Stormwater Webpage

Message Description and Distribution Method:

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

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Continue to maintain and update webpages with relevant information, links, and BMPs.

Message Date(s): Ongoing

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

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

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

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

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

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Check off the box below if the statement is true.

This SSO section is NOT applicable because we DO NOT have sanitary sewer

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

Number of SSOs identified: 0

Number of SSOs removed:

MS4 System Mapping

Below, check all that apply.

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

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

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

Phase I Mapping - all known outfalls, stormwater BMPs, and receiving waterbodies with impairments have been mapped to date. Initial catchment delineations have also been completed based on topographic mapping and available stormwater system information. Mapping of open channel conveyances and any newly located outfalls is ongoing. Mapping interconnections with other MS4s (e.g. DOT) is ongoing, and it is expected that this will continue as part of DOT's own mapping efforts to be completed under a future TS4 permit.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses.

- The outfall screening data is attached to the email submission
- The outfall screening data can be found at the following website:

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

Number of outfalls screened:

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- The catchment investigation data is attached to the email submission
- The catchment investigation data can be found at the following website:

N/A, none completed to date

*Below, report on the number of catchment investigations completed **during this reporting period.***

Number of catchment investigations completed this reporting period:

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

Percent of total catchments investigated:

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

IDDE Progress

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

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

N/A, none found to date

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

Number of illicit discharges identified:

Number of illicit discharges removed:

Estimated volume of sewage removed: gallons/day

*Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed **since the effective date of the permit (July 1, 2018).***

Total number of illicit discharges identified:

Total number of illicit discharges removed:

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

Employee Training

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

A virtual IDDE training session was held on June 22, 2020 with applicable DPW staff. This session also provided brief training on general Good Housekeeping procedures and the DPW Facility and Transfer Station.

*Below, report on the construction site plan reviews, inspections, and enforcement actions completed **during this reporting period.***

Number of site plan reviews completed: 52

Number of inspections completed: 130

Number of enforcement actions taken: 3

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

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

Ordinance or Regulatory Mechanism

Below, select the option that describes your ordinance or regulatory mechanism progress.

- Bylaw, ordinance, or regulations are updated and adopted consistent with permit requirements
- Bylaw, ordinance, or regulations are updated consistent with permit requirements but are not yet adopted
- Bylaw, ordinance, or regulations have not been updated or adopted

As-built Drawings

Describe the measures the MS4 has utilized to require the submission of as-built drawings and ensure long term operation and maintenance of completed construction sites:

Under current Zoning regulations, developers are required to submit as-built plans. The Town was working during Year 2 to update regulations to incorporate procedures for submittal of as-builts and long term operation for all applicable developments, however, as a result of the COVID-19 outbreak, regulations were not updated as planned during Permit Year 2. The Town now anticipates completing stormwater regulatory updates as part of the Year 3 requirements under EPA's pending updated permit schedule.

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

N/A, to be completed during future permit years.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

N/A, to be completed during future permit years.

Retrofit Properties Inventory

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

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

MCM6: Good Housekeeping

Catch Basin Cleaning

*Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins **during this reporting period.***

Number of catch basins inspected:

Number of catch basins cleaned:

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

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

Total number of catch basins:

If applicable:

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

Not yet applicable.

Street Sweeping

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

- Number of miles cleaned:
- Volume of material removed: [Select Units]
- Weight of material removed: tons

O&M Procedures and Inventory of Permittee-Owned Properties

Below, check all that apply.

The following permittee-owned properties have been inventoried:

- Parks and open spaces
- Buildings and facilities
- Vehicles and equipment

The following O&M procedures for permittee-owned properties have been completed:

- Parks and open spaces
- Buildings and facilities
- Vehicles and equipment

Stormwater Pollution Prevention Plan (SWPPP)

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

Number of site inspections completed:

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

Not Applicable. The Town has no standalone maintenance garage or other waste handling facility. The Town's DPW Facility and and Transfer Station are located on adjacent parcels within the urbanized area, however, all stormwater infiltrates onsite. Based on the location of both facilities, underlying pervious soils, and surrounding topography, it has been determined that both facilities will not discharge to the Town's MS4 or a Waterbody of the United States under any conditions. Should future evaluation determine that any facilities drain to the MS4, the Town will prepare a SWPPP(s) as required by the 2016 MS4 Permit.

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- Not applicable
- The results from additional reports or studies are attached to the email submission
- The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

N/A, not started yet.

Additional Information

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

Structural BMP Inspections - all known structural BMPs were inspected in May 2020. Any required maintenance will be performed during Year 3.

COVID-19 Impacts

Optional: If any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

As-Builts and Long-Term O&M - under current Zoning regulations, developers are required to submit as-built plans. The Town was working during Year 2 to update regulations to incorporate procedures for submittal of as-builts and long term operation for all applicable developments, however, as a result of the COVID-19 outbreak, regulations were not updated as planned during Permit Year 2. The Town now anticipates completing stormwater regulatory updates as part of the Year 3 requirements under EPA's pending updated permit schedule.

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 3 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree

- Inspect all outfalls/ interconnections (excluding Problem and Excluded outfalls) for the presence of dry weather flow
- Complete follow-up ranking as dry weather screening becomes available

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to

- receiving waters
- Annual training to employees involved in IDDE program
 - Update inventory of all known locations where SSOs have discharged to the MS4
 - Continue public education and outreach program
 - Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
 - Implement IDDE program
 - Review site plans of construction sites as part of the construction stormwater runoff control program
 - Conduct site inspection of construction sites as necessary
 - Inspect and maintain stormwater treatment structures
 - Log catch basins cleaned or inspected
 - Sweep all uncurbed streets at least annually
 - Continue investigations of catchments associated with Problem Outfalls
 - Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary

Provide any additional details on activities planned for permit year 3 below:

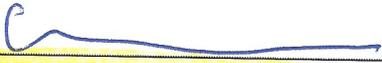
The SWMP Plan and IDDE Plan will be updated during FY-21 to address all work performed through Year 3. This will include incorporating the above items into the SWMP Plan and/or IDDE Plan as necessary, incorporate results from outfall dry weather screening, as well as documenting results of other annual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

Part V: Certification of Small MS4 Annual Report 2020

40 CFR 144.32(d) Certification

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

Name: Elizabeth Sullivan Title: Town Administrator

Signature:  Date: 9/8/20

[Signatory may be a duly authorized representative]

Year 3 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2020-June 30, 2021

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

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

Part I: Contact Information

Name of Municipality or Organization:

EPA NPDES Permit Number:

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Stormwater Management Program (SWMP) Information

SWMP Location (web address):

Date SWMP was Last Updated:

If the SWMP is not available on the web please provide the physical address:

Part II: Self-Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4. Make sure you are referring to the most recent EPA approved Section 303(d) Impaired Waters List which can be found here: <https://www.epa.gov/tmdl/region-1-impaired-waters-and-303d-lists-state>

Impairment(s)

Bacteria/Pathogens Chloride Nitrogen Phosphorus
 Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State: Assabet River Phosphorus Bacteria and Pathogen Cape Cod Nitrogen
 Charles River Watershed Phosphorus Lake and Pond Phosphorus

Out of State: Bacteria/Pathogens Metals Nitrogen Phosphorus

Clear Impairments and TMDLs

Next, check off all requirements below that have been completed. **By checking each box you are certifying that you have completed that permit requirement fully.** If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.

Year 3 Requirements

- Inspected and screened all outfalls/interconnections (excluding Problem and Excluded outfalls)
- Updated outfall/interconnection priority ranking based on the information collected during the dry weather inspections as necessary
- Post-construction bylaw, ordinance, or other regulatory mechanism was updated and adopted consistent with permit requirements

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Dry Weather Outfall Screening - During 2020 and 2021, the Town attempted to inspect all 44 known stormwater outfalls within the urbanized area during dry weather to investigate for potential illicit discharges. Of the 44 known stormwater outfalls that were attempted to be inspected, 36 were located and 3 of which were flowing. The 3 flowing outfalls were sampled, none of which met the permit criteria for being highly likely to contain illicit discharges. The remaining 8 outfalls that could not be located or accessed were instead investigated at the immediate upgradient structure for potential illicit discharge indicators, of which none were observed. Note, numbers above represent all outfall screening completed to date. Numerous outfalls were revisited between Year 2 and Year 3 and thus it is difficult to quantify the number of outfalls screened in individual years.

Update Outfall Inventory and Priority Ranking - Outfall inventory and priority ranking was conducted concurrent with a comprehensive update of the SWMP and IDDE Plans, completed on June 30, 2021. The Town will continue to locate and inspect additional stormwater infrastructure during future permit years.

Construction and Post-Construction Bylaw - The Town previously adopted a “Stormwater Management” bylaw under Chapter 154 Stormwater Management, Sections 154-1 through 154-8 which regulate construction projects greater than 20,000 square feet. The town also previously adopted accompanying regulations; however, regulations do not meet all Permit requirements. The Town is currently in the process of revising its stormwater regulations to meet all permit requirements to address nitrogen removal optimization for new development and redevelopment projects, among other requirements. Town offices have been closed to the public and business conducted largely electronically for the past 1+ years which has limited opportunities for meetings to finalize the regulatory mechanisms.

Annual Requirements

- Provided an opportunity for public participation in review and implementation of SWMP and complied with State Public Notice requirements
- Kept records relating to the permit available for 5 years and made available to the public
- The SSO inventory has been updated, including the status of mitigation and corrective measures implemented
 - This is not applicable because we do not have sanitary sewer
 - This is not applicable because we did not find any new SSOs
 - The updated SSO inventory is attached to the email submission
 - The updated SSO inventory can be found at the following website:
- Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters
- Provided training to employees involved in IDDE program within the reporting period
- All curbed roadways were swept at least once within the reporting period
- Updated system map due in year 2 as necessary
- Enclosed all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- Updated inventory of all permittee owned facilities as necessary
- O&M programs for all permittee owned facilities have been completed and updated as necessary
- Implemented all maintenance procedures for permittee owned facilities in accordance with O&M programs
- Implemented program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- Inspected all permittee owned treatment structures (excluding catch basins)

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

SWPPPs - The Town has no standalone maintenance garage or other waste handling facility. The Town's DPW Facility and and Transfer Station are located on adjacent parcels within the urbanized area, however, all stormwater infiltrates onsite. Facilities do not discharges to Waters of the U.S. and/or the Town's regulated MS4 system. Based on the location of both facilities, underlying pervious soils, and surrounding topography, it has been determined that both facilities will not discharge to the Town's MS4 or a Waterbody of the United States under any conditions.

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- Annual message was distributed encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- Permittee or its agents disseminated educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- Provided information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

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

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

Nitrogen (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

*Public Education and Outreach**

- Distributed an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers
- Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

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

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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

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

Street Sweeping - the Town swept all high traffic areas and areas with windblown sand near beaches two or three times per year. Most other main and secondary roadways, as well as municipal parking lots, were swept once per year.

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

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

- Yes
 No

If yes, describe below, including any relevant impairments or TMDLs:

The Town has determined it is subject to the following additional TMDL and Impaired Waters requirements:
-Chase Garden Creek (MA96-103), bacteria impaired waters requirements (Appendix H, Part III)

The Town also updated its list of outfalls and receiving waters as new outfalls were found during the dry weather screening. The inspection results are attached to this annual report and a list and updated prioritization are also kept with the Town's IDDE Plan.

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed during this reporting period:

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

BMP: Stormwater pollution is trash, oil/cigarette butts, & dog waste

Message Description and Distribution Method:

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

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s):

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

BMP: Stormwater Webpage

Message Description and Distribution Method:

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

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Message Date(s): Ongoing / Continuous

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

BMP: Social Media Outreach

Message Description and Distribution Method:

Post seasonal messages on the town's Facebook page. Messages address fertilizer usage (spring), pet waste (summer), and leaf litter (fall). Also post message on construction site runoff control periodically throughout the year. All messages were also posted on the town's website.

Targeted Audience: Residents, Businesses, institutions and commercial

Responsible Department/Parties: Engineering Dept, Information Technology

Measurable Goal(s):

Post seasonal messages during all seasons to the town's Facebook page and website.

Message Date(s): Seasonal

Message Completed for: Appendix F Requirements Appendix H Requirements

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

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

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

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

[Empty text box]

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

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

[Empty text box for public involvement description]

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Check off the box below if the statement is true.

This SSO section is NOT applicable because we DO NOT have sanitary sewer

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

Number of SSOs identified:

Number of SSOs removed:

MS4 System Mapping

Optional: Provide additional status information regarding your map:

All known outfalls, stormwater BMPs, and receiving waterbodies with impairments have been mapped to date. Initial catchment delineations have also been completed based on topographic mapping and available stormwater system information. Mapping of open channel conveyances and any newly located outfalls is ongoing. Mapping interconnections with other MS4s (e.g. DOT) is ongoing, and it is expected that this will continue as part of DOT's own mapping efforts to be completed under a future TS4 permit.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses. Please also include the updated inventory and ranking of outfalls/interconnections based on monitoring results.

- No outfalls were inspected
- The outfall screening data is attached to the email submission
- The outfall screening data can be found at the following website:

[Empty text box for website information]

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

Number of outfalls screened:

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

Percent of outfalls screened:

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

During 2020 and 2021, the Town attempted to inspect all 44 known stormwater outfalls within the urbanized area during dry weather to investigate for potential illicit discharges. Of the 44 known stormwater outfalls that were attempted to be inspected, 36 were located and 3 of which were flowing. The 3 flowing outfalls were sampled, none of which met the permit criteria for being highly likely to contain illicit discharges. The remaining 8 outfalls that could not be located or accessed were instead investigated at the immediate upgradient structure for potential illicit discharge indicators, of which none were observed. Note, numbers above represent all outfall screening completed to date. Numerous outfalls were revisited between Year 2 and Year 3 and thus it is difficult to quantify the number of outfalls screened in individual years.

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- No catchment investigations were conducted
- The catchment investigation data is attached to the email submission
- The catchment investigation data can be found at the following website:

*Below, report on the number of catchment investigations completed **during this reporting period**.*

Number of catchment investigations completed this reporting period:

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

Percent of total catchments investigated:

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

IDDE Progress

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

- No illicit discharges were found
- The illicit discharge removal report is attached to the email submission
- The illicit discharge removal report can be found at the following website:

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

Number of illicit discharges identified:

Number of illicit discharges removed:

Estimated volume of sewage removed: gallons/day

*Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed **since the effective date of the permit (July 1, 2018).***

Total number of illicit discharges identified:

Total number of illicit discharges removed:

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

Employee Training

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

An on-site IDDE training session was held on June 3, 2021 with applicable DPW staff.

MCM4: Construction Site Stormwater Runoff Control

*Below, report on the construction site plan reviews, inspections, and enforcement actions completed **during this reporting period.***

Number of site plan reviews completed:

Number of inspections completed:

Number of enforcement actions taken:

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

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

As-built Drawings

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

Number of as-built drawings received:

Optional: Enter any additional information relevant to the submission of as-built drawings:

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

N/A, to be completed during Permit Year 4.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

N/A, to be completed during Permit Year 4.

Retrofit Properties Inventory

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

The Town completed an inventory of its permittee-owned properties during this permit year. Facilities will be evaluated for potential BMP retrofit opportunities during Permit Year 4.

MCM6: Good Housekeeping

Catch Basin Cleaning

*Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins **during this reporting period.***

Number of catch basins inspected:

Number of catch basins cleaned:

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

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

Total number of catch basins:

If applicable:

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

Street Sweeping

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

Number of miles cleaned:

Volume of material removed:

Weight of material removed:

Stormwater Pollution Prevention Plan (SWPPP)

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

Number of site inspections completed:

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

Not Applicable. The Town has no standalone maintenance garage or other waste handling facility. The Town's DPW Facility and and Transfer Station are located on adjacent parcels within the urbanized area, however, all stormwater infiltrates onsite. Facilities do not discharges to Waters of the U.S. and/or the Town's regulated MS4 system. Based on the location of both facilities, underlying pervious soils, and surrounding topography, it has been determined that both facilities will not discharge to the Town's MS4 or a Waterbody of the United States under any conditions.

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- Not applicable
- The results from additional reports or studies are attached to the email submission
- The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

Additional Information

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

COVID-19 Impacts

Optional: If any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Town offices have been closed to the public and business conducted largely electronically for the past 1+ years. This has limited opportunities for public education/participation, as well as meeting opportunities for finalizing the regulatory mechanisms.

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 4 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree

- Develop a report assessing current street design and parking lot guidelines and other local requirements within the municipality that affect the creation of impervious cover
- Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist
- Identify a minimum of 5 permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious areas

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all curbed streets at least annually
- Continue investigations of catchments associated with Problem Outfalls
- Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary
- Review O&M programs for all permittee owned facilities; update if necessary
- Implement all maintenance procedures for permittee owned facilities in accordance with O&M programs
- Implement program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- Enclose all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- Review as-built drawings for new and redevelopment to ensure compliance with post construction bylaws, regulations, or regulatory mechanism consistent with permit requirements
- Inspect all permittee owned treatment structures (excluding catch basins)

Provide any additional details on activities planned for permit year 4 below:

Part V: Certification of Small MS4 Annual Report 2021

40 CFR 144.32(d) Certification

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

Name:

Elizabeth Sullivan

Title:

Town Administrator

Signature:



Date:

9/23/21

[Signatory may be a duly authorized representative]