

Year 4 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2021-June 30, 2022

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, 2021 and June 30, 2022 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:

Impairment(s)			
<input type="checkbox"/> Bacteria/Pathogens	<input type="checkbox"/> Chloride	<input type="checkbox"/> Nitrogen	<input type="checkbox"/> Phosphorus
<input type="checkbox"/> Solids/ Oil/ Grease (Hydrocarbons)/ Metals			
TMDL(s)			
<i>In State:</i>	<input type="checkbox"/> Assabet River Phosphorus	<input checked="" type="checkbox"/> Bacteria and Pathogen	<input checked="" type="checkbox"/> Cape Cod Nitrogen
	<input type="checkbox"/> Charles River Watershed Phosphorus	<input type="checkbox"/> Lake and Pond Phosphorus	
<i>Out of State:</i>	<input type="checkbox"/> Bacteria/Pathogens	<input type="checkbox"/> Metals	<input type="checkbox"/> Nitrogen
		<input type="checkbox"/> Nitrogen	<input type="checkbox"/> 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 4 Requirements

- Developed a report assessing current street design and parking lot guidelines and other local requirements within the municipality that affect the creation of impervious cover, made it available as part of the SWMP, and:

- No updates were recommended
- Updates were recommended. The anticipated date or date of completion for updates is/was:

The Cape Cod Commission completed a review of Town bylaws and regulations related to impervious cover

- Developed a report assessing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist, made it available as part of the SWMP, and:

- No updates were recommended
- Updates were recommended. The anticipated date or date of completion for updates is/was:

The Cape Cod Commission completed a review of Town bylaws and regulations related to green infrastructure

- Identified a minimum of 5 permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious cover

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

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:

The Town is currently in the process of installing a sanitary sewer system. The project is 86% done and has a scheduled substantial completion in October 2022.

- Updated system map due in year 2 as necessary
- Provided training to employees involved in IDDE program within the reporting period
- Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters
- All curbed roadways were swept at least once within the reporting period
- 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 or provide any additional details, please use the box below:

The Town reviewed the need to develop and implement SWPPPs at Town owned or operated facilities in accordance with Section 2.3.7.b of the permit. These facilities included the Department of Public Works and Natural Resources Facility and Transfer Station/Landfill sites. The Town, with support from their consultant, determined that SWPPPs were not required because these facilities do not discharge to the MS4 or surface waters. The facilities have storm drain infrastructure that discharges to subsurface infiltration systems with no off-site discharges.

Staff shortages were a result of COVID-19, which led to the Town being unable to inspect all municipally-owned BMPs.

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:

The Town distributed 631 pet waste messages during dog license issuance/renewal through the Town Clerk's office during this permit 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:

The Town completed enhanced street sweeping activities in urbanized areas during this permit year using a Tymco street sweeper equipped with a vacuum, broom, and filters designed to remove more fines. The Town invested in this equipment as a direct response to improving water quality in heavily developed areas.

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

The Town continues to appropriate approximately \$200k annually exclusively to fund stormwater quality efforts, including design and retrofit of stormwater treatment structures. This has resulted in improved water quality and a reduction in shellfish bed closures.

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 evaluated the "Final Massachusetts Integrated List of Waters from the Clean Water Act 2018/2020 Reporting Cycle" and noted the following change has been made to the Town's waterbody impairments. Additions and/or removals of impairments and TMDLs do not affect the Town's implementation of related Appendix F and Appendix H requirements previously described in the Stormwater Management Plan:

- Boat Meadow River (MA96-15) - Fecal coliform was removed.*
- Rock Creek Harbor (MA96-16) - Fish passage barrier was added as a TMDL.*
- Cedar Pond (MA96-88) - Fish passage barrier, chlorophyll-a, and dissolved oxygen saturation were added as impairments.*
- Town Cove (MA96-68) - Estuarine bioassessments was added as an impairment.*
- Uncle Harvey Pond (MA96319) - Total phosphorus was removed and harmful algal blooms was added as an impairment.*
- Pochet Neck (MA96-73) - Estuarine bioassessments was added as an impairment.*
- Baker Pond (MA96008) - Mercury in fish tissue was added as a TMDL.*
- Namequiot River (MA96-71) - Estuarine bioassessments was added as an impairment.*
- Areys Pond (MA96-70) - Estuarine bioassessments was added as an impairment.*
- Paw Wah Pond (MA96-72) - Estuarine bioassessments was added as an impairment.*
- Little Pleasant Bay (MA96-78) - Fecal coliform was added as a TMDL.*
- Pleasant Bay (MA96-77) - Estuarine bioassessments was added as an impairment.*
- Pleasant Bay (MA96-75) - Fecal coliform and total nitrogen were removed.*
- The River (MA96-76) - Fecal coliform and total nitrogen were removed.*

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: Website Updates for General Public

Message Description and Distribution Method:

The Town's Department of Public Works and Natural Resources maintains a "Stormwater" website accessible from their department page.

The website contains information on the Town of Orleans stormwater programs as well as general stormwater educational materials. Information specific to Orleans and Cape Cod linked to the website includes staff contact information for, a link to the Town's Stormwater Bylaws, a link to public participation activities and educational materials sponsored by the Cape Cod Groundwater Guardians, a link to education materials related to nitrogen pollution in Cape Cod's waters developed by Cape Cod Water, and a link to the Town's Stormwater Management Plan (SWMP), and related contact information to submit public comments on the SWMP.

The general stormwater information linked to the website includes a description of stormwater and pollutants commonly found in stormwater, a link to the EPA NPDES general website, a link to the MassDEP stormwater website, and three educational stormwater videos:

- 1) "EPA: The Scoop on Stormwater" describes how pollutants can be transported through stormwater and how heavy rainfall can damage habitats and infrastructure. It goes on to present different types of green infrastructure and how it can prevent stormwater-related issues.*
- 2) "Stormwater 101" explains how rain cannot absorb into developed areas as easily as forests. It then describes potential pollutants and risks that arise with poor stormwater management, and presents ways people can keep their stormwater clean.*
- 3) "Faces of 'Soak up the Rain'" describes how stormwater runoff is one of the greatest threats to clean water. It goes through green infrastructure methods and how they are being implemented nationwide.*

The website is located at: <https://www.town.orleans.ma.us/stormwater>

Targeted Audience:

Responsible Department/Parties:

Measurable Goal(s):

Promote stormwater awareness by posting updated stormwater content. Track hits with a goal of increasing hits annually.

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: Brochures for Residents

Message Description and Distribution Method:

The Town developed flyers and bookmarks with information regarding general stormwater pollution prevention, such as: ways stormwater can get polluted, water impairments within the Town's receiving waters, proper lawn care maintenance tips, car and boat washing tips, household hazardous waste disposal tips, ways to avoid over-salting driveways and parking lots in the winter, picking up pet waste, composting yard waste, etc. These flyers and bookmarks were left on the counter at the DPW for the public to take.

Targeted Audience: *Residents*

Responsible Department/Parties: *DPW Operations Manager, Highway Department*

Measurable Goal(s):

Prepare and distribute appropriate stormwater management messages annually.

Message Date(s): *On-going*

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: Brochures for Dog Owners and Residents

Message Description and Distribution Method:

The Town updated flyers to educate dog owners on ways pet waste can cause stormwater pollution, and how dog owners can help prevent pollution from entering Town waterbodies. Flyers were distributed to residents during the dog licensing process.

Targeted Audience: *Residents*

Responsible Department/Parties: *DPW Operations/Town Clerk*

Measurable Goal(s):

Update annually and distribute with dog license information. The flyers were distributed with dog license issuance during this permit year, and also put out for distribution at the Town Clerk's office. The Town distributed 631 of these flyers to residents during the permit year.

Message Date(s): *On-going*

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: Brochures for Septic Tank Owners

Message Description and Distribution Method:

The Town developed flyers to educate septic system owners on how septic systems can contribute to stormwater pollution and how owners can operate and maintain their systems to help prevent stormwater pollution. The flyer also includes link to the Town's stormwater web page, the EPA's NPDES web page, and the EPA's septic system web page for additional information.

Targeted Audience: *Septic Tank Owners*

Responsible Department/Parties: *DPW Operations/Health Agent*

Measurable Goal(s):

Distribute to septic owners. The flyers were put out for distribution at the Health Agent's office.

Message Date(s): *On-going*

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: Television Messaging

Message Description and Distribution Method:

Quarterly Select Board updates are shown on television, as well as Town meeting preparatory meetings to justify and discuss stormwater BMP projects to be completed.

Targeted Audience: *General Public*

Responsible Department/Parties: *Select Board*

Measurable Goal(s):

Broadcast Board of Selectman meetings that cover stormwater management topics on local cable TV.

Message Date(s): *Quarterly*

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:/Message name here/

Message Description and Distribution Method:

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:

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:**

The original SWMP was posted on July 11, 2019 and most recently updated in Permit Year 4. No comments on the SWMP have been received to date.

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:**

Select Board and Town Meeting Preparatory Public Meetings are available to the public to participate in. Additionally, the Celebrate Our Waters Weekend occurred in September 2021.

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:

Updates to the MS4 map are ongoing and made as required. A separate map containing waterbodies and their applicable impairments/TMDLs was updated during this permit year to reflect changes made in the Massachusetts Year 2018/2020 Integrated List of Waters.

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:

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:

A few outfalls were not located during screening activities in Permit Year 3. Upstream structures at these locations were obstructed but did not exhibit signs of dry weather flow. The Town conducted maintenance on these structures and they will be investigated as part of future catchment investigations.

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:

The Town has updated the priority list and will initiate catchment investigation in the upcoming Permit Year 5.

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:**

The Town conducts opportunistic training on IDDE related topics during drainage infrastructure maintenance activities and internal meetings throughout the course of the Permit Year.

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

Ordinance or Regulatory Mechanism

Date update was completed (due in year 3):

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:

Retrofit Properties Inventory

Below, list the permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas (at least 5):

Doane Rd. Landing
Champlain Rd. Landing
Snow Shore Rd. Landing
Portanimicut Rd. Landing
River Rd.
Cover Rd Landing

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:

Schedule adjustments will be made, if necessary, to prioritize catch basins located at known potential problem areas (low spots) and near construction activities. If inspection and maintenance activities identify excessive sediment and debris accumulation these catch basins will be prioritized for more frequent cleaning. Where necessary, start sweeping will be utilizing to aim in minimizing catch basin sediment loading.

Main roads with curbs were swept three times due to higher traffic leading to higher pollutant load risk. Parking lots were swept once.

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:

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:

The Town reviewed the need to develop and implement SWPPPs at Town owned or operated facilities in accordance with Section 2.3.7.b of the permit. These facilities included the Department of Public Works and Natural Resources Facility and Transfer Station/Landfill sites. The Town, with support from their consultant, determined that SWPPPs were not required because these facilities do not discharge to the MS4 or surface waters. The facilities have storm drain infrastrucute that discharges to subsurface infiltration systems with no off-site discharges.

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:

The Town has implemented a permit for \$8000... 75%... BMP...

COVID-19 Impacts

Optional: If any of the above year 4 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:

Staff shortages were a result of COVID-19, which led to the Town being unable to inspect all municipally-owned BMPs.

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 5 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree

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)
- Identify additional permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious areas so that the permittee maintains a minimum of 5 sites in their inventory, until such a time when the permittee has less than 5 sites remaining

Provide any additional details on activities planned for permit year 5 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: Title:

Signature: Date:

[Signatory may be a duly authorized representative]