

**Municipality/Organization:** Town of Mashpee

**EPA NPDES Permit Number:** MAR041129

**MassDEP Transmittal Number:** W-035197

**Annual Report Number** Year 14  
**& Reporting Period:** April 1, 2016 – March 31, 2017

**NPDES PII Small MS4 General Permit  
Annual Report  
(Due: May 1, 2017)**

**Part I. General Information**

**Contact Person:** Catherine Laurent

**Title:** DPW Director

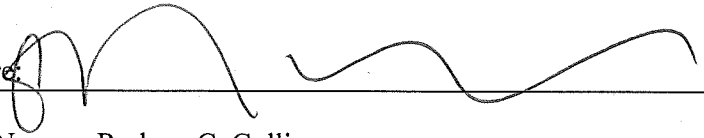
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**Certification:**

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, 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.

**Signature:** 

**Printed Name:** Rodney C. Collins

**Title:** Town Manager

**Date:** 4.10.2017

## **Part II. Self-Assessment**

The Town of Mashpee has continued to implement its Stormwater Management Program with an annual average budget of \$60,000 per year to make progress towards complying with EPA's NPDES General Permit for Stormwater Discharges from Small MS4s, effective May 1, 2003. Due to budget restrictions in recent years, the annual reports for permit years 11 through 13 were not submitted to EPA and MassDEP by the respective due dates. The Town has chosen to develop one report to cover this period, in addition to permit year 14, with separate certification cover sheets for permit years 11, 12, 13 and 14 for filing purposes.

Mashpee's Stormwater Management Program for permit years 11 through 14 include many BMP's that meet and exceed the minimum requirements of the 2003 permit with a focus on effectively addressing the control of nitrogen and stormwater pollution prevention to Mashpee's surface and groundwater. Highlights of the program include:

- Ongoing public education, outreach, and participation
- The Planning Board and Department of Public Works continue to enforce Town bylaws that manage stormwater including provisions for site plan review, consideration of water quality impacts, inspections and monitoring:
  - o Erosion and Sediment Control bylaw addresses and manages construction site and post-construction stormwater runoff
  - o Stormwater Management bylaw sets standards for applicable new residential and non-residential projects which are intended to protect ground and surface water quality, prevent flooding and minimize erosion and sedimentation. LID methods are prescribed with an emphasis on systems capable of removing nitrogen
  - o Stormwater management provisions are provided through requirements in specific zoning overlay districts to mitigate flooding, prohibit dumping, and control hazardous waste storage and limit impervious surfaces.
  - o Stormwater management standards for roadways are specified for roadways through Mashpee's Subdivision Rules and Regulations specifically designed to reduce impacts of nutrients to groundwater and prevent off site flooding.
  - o Mashpee Wetlands Bylaw addresses adverse impacts on regulated resources for both pre-construction and

post-construction impacts. Adverse impacts include erosion, siltation, loss of groundwater recharge, poor water quality and loss of wildlife habitat.

- In 2015, Mashpee passes a Nitrogen Control Bylaw to establish performance standards for certain land uses to minimize impacts from application of nitrogen fertilizers
- An ongoing IDDE Program where outfalls have been mapped, illegal dumping is prohibited and non-stormwater discharges to the MS4 are reported to the Board of Health
- Each year, the DPW follows good housekeeping practices, upgrades the drainage system as needed, sweeps municipal streets and keeps the storm drain systems clean of debris through catch basin cleaning
- Town continues to eliminate direct discharge from roadways, especially where discharge is to a surface water. Over 32 drainage improvement projects have been completed over the past five years.
- Water quality in Santuit Pond has been monitored annually to track benefits of 6 solar-powered artificial water circulators installed to decrease anaerobic conditions, the release of phosphorus and the formation of algal blooms. Improvements in water quality have been monitored over the year. Since their installation, water clarity in the pond, measured by Secchi Disk, has improved by over 50%.
- Mashpee Shellfish Department continues to monitor water quality in shell fishing and fish spawning areas and complete required sanitary surveys on a tri-annual basis. As part of the sanitary survey, sources of bacteria are tracked back up into the watershed and if a source is discovered, it is eliminated.

As part of developing the annual report, the Town evaluated compliance of the stormwater management program with the conditions of the General Permit, as required by Part II.D.1 of the permit. Evaluation of Permit Years 11 through 13 shows the Town has continued to implement the majority of the Best Management Practices (BMPs) identified in the Notice of Intent (NOI) and met many of the measurable goals for these BMPs, and has continued to meet numerous General Permit requirements.

As part of the annual report development, the Town also evaluated the appropriateness of all BMPs in efforts towards achieving the defined measurable goals as required by Part II.D.2 of the permit. This year, BMPs and measurable goals continue to be appropriate. No BMPs were modified or replaced.

Mashpee plans to reevaluate its Stormwater Management Plan as part of preparing and submitting a Notice of Intent by the required deadline in September 2017.

### Part III. Summary of Minimum Control Measures

#### 1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11-14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
PE1	Zone II Information	Public Works; EOC; Water District	Distribute information annually on protection of drinking water	Environmental Oversight Committee (EOC) developed “Mashpee Blue Book”, a guide for home owners on drinking water protection, low impact storm water practices, etc. The book was mailed to all Mashpee property owners in 2011. The book is still available at the Town’s library and online	Continue to provide information on water quality, non-point source pollution and water conservation through annual consumer confidence reports.
Revised				Mashpee Water District provides information on water quality, non-point source pollution and water conservation through annual consumer confidence reports.	
PE2	Storm Water Information	Public Works; County; EOC	Develop and distribute information annually on impacts of storm water on water bodies and groundwater	See “Mashpee Blue Book” above.  Mashpee Environmental Coalition (MEC) distributed storm water information through their quarterly newsletter.  Town maintained information on website regarding quarterly household hazardous waste collections and electronics recycling. ‘Too Toxic to Trash’ brochures were mailed to all residents.  Watershed clean up events including Coast Sweep, Earth Day Community Clean Up and Land Stewards Clean Up events were advertised in the paper and posted on the Towns website.	Continue to work with MEC to distribute information.  Continue to update and post information regarding recycling options at the transfer stations and household hazardous waste collections on the Town 's website.  Continue to post information regarding stormwater and environmental issues and pollution prevention actions on the Town 's website and in print at Town Hall.

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 11-14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
Revised				Information about the Town composting program is provided on the Town's website.  Information about mitigating impacts of nitrogen to surface and ground water, including Mashpee's composting program, shellfish harvesting, and sustainable turf management, are posted at Town Hall. The Town estimates that all property owners have been reached through the combination of available education programs	Continuing to work with local, regional and state partners to provide additional educational opportunities on stormwater and pollution prevention.
PE3	Storm Drain Stenciling	Public Works	Stencil drains in target areas	None to date. This project is no longer offered through the County.	No action proposed.
Revised				Originally, the intent was to utilize materials provided by the County to Mashpee DPW staff to complete the stenciling. Because this BMP became infeasible, the intent of the BMP is met by other ongoing BMPs under MCM #1.	
PP4	Storm Water School Program	Public Works; School Dept; County	Develop program for presentation to Grades 3-5	Cape Cod AmeriCorps held water festival for Grade 5 students annually with over 1,000 students participating since 2011.	Work with School Department to schedule program for school-wide assembly.
Revised					

### 1a. Additions

No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.

## 2. Public Involvement and Participation

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 11-14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
PP1	Community Cleanups	Public Works, Conservation	Continue to organize annual cleanups of Town properties	Conducted annual Earth Day clean ups of several Town properties (Noisy Hole Road, Mashpee Wildlife Refuge, Heritage Park, Mashpee Dog Park). Mashpee Conservation Department expanded the Land Steward Program, keep digital records on volunteer efforts and quantities of materials removed.  Mashpee DPW provided support to dispose of collected material for all clean-up events.	Continue conducting and working with others on clean ups. Set up spreadsheet to track clean up events and quantities of materials removed.  Continue Land Steward program including tracking progress of efforts.  Encourage School Department and after-school programming through the Recreation Department to participate in community clean up events.
Revised					
PP2	Reciprocal HHP Collections	Public Works	Continue to provide HHP collections	Held and funded quarterly household hazardous waste collections with towns of Sandwich, Falmouth, and Bourne Residents able to participate at no direct cost.  Brochures “Too Toxic to Trash” sent to all residents to advertise dates and disposal guidelines for hazardous materials.	Continue to offer quarterly collections through regional Household Hazardous Waste Program. Support efforts of the Cape Cod Extension Service to advertise the collection events and safe disposal guidelines.
Revised					
PP3	Permanent HHP Collections	Public Works	Continue to provide permanent collection of certain products at Transfer Station	Collected used oil (6,600 gallons), spent antifreeze (330 gallons), CRTs (150 tons), car batteries (300 total), rechargeable batteries (42 boxes), and mercury products (including over 60,000 LF of bulbs) from residents.	Continue to offer residents opportunities to safely dispose of oil, batteries and universal waste through transfer station collection.
Revised					

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PP4	Pooper Scoopers	Animal Control	Expand provision of “pooper scoopers” on Town properties beginning in '03	Maintained existing pooper scoopers at five locations throughout town including Heritage Park and Mashpee Dog Park.	Identify other areas for provision of pooper scoopers and install. Explore options to expand and maintain the program using cooperative business funding model. Provide brochures on pooper scooper availability and safe disposal of pet waste at Town Hall to residents purchasing dog licensees.
Revised					
PP5	Fertilizer/Pesticide Use	Public Works; EOC	Develop and distribute information on effects of fertilizer and pesticides use on water	Use of slow release nitrogen, zero phosphorus fertilizers on Town properties. Nitrogen Management bylaw was passed at town meeting. Integrated Pest Management program implemented for Schools and Town properties. Information on sustainable residential turf management is posted on the Town’s Website. .	Implement Integrated Pest Management program and turf management for Town properties.  Work with Cape Cod Extension Service to promote soil testing services and sustainable turf management recommendations consistent with Mashpee’s Nitrogen Management bylaw. Follow up on EOC recommendations to create a “friendly lawn” program like Falmouth Friendly Lawns.
Revised					
PP6	Regulatory Board Education	Public Works; County	Develop educational program for regulatory boards/commissions	No action.	Schedule training with DEP Circuit Rider program. Investigate other low cost options for environmental regulatory update and municipal facility good housekeeping training.
Revised					

## 2a. Additions

**No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.**

### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11-14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
IDD1	Outfall Identification	Public Works; GIS	Map drainage and outfall locations	Created GIS layer from flyover to include manholes and catchbasins. These drainage system elements now are located with greater accuracy compared to 2005 drainage map.  To date, the Town has developed a map of the drainage system that includes 37 outfalls, approximately 4,000 catch basins, 2,730 manholes, 86 culverts, and 10 segments of open drainage. Receiving waterbodies are available on MassGIS datalayers. Some of these drainage areas are outside of the urbanized/regulated area and some of these are private roadways and developments.  NOTE: Most of Mashpee's MS4 consists of leaching catch basins, not system of connected pipes with specific outfall structures.	Continue to improve mapping to confirm locations of MS4 outfalls and update GIS data layer to include outfall locations within the urbanized area and drainage system features from new development as necessary.
Revised					



BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11-14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
IDD2	Prohibition of Illicit Discharge	Public Works	Amend General Bylaw to explicitly prohibit illicit discharge	<p>The Town addresses illicit discharge in several ways.</p> <ul style="list-style-type: none"> <li>Under the Board of Health Regulations, <i>Part VII: Nuisance Control Regulations</i>, the Town recognizes and enforces <i>Chapter 130 The State Illegal Dumping Act under Section 2.00</i>. This act prohibits illegal dumping of trash, refuse or rubbish on any public land, or upon coastal or inland waters and is punishable by a fine.</li> <li>Under the General Bylaws, <i>Health and Sanitation Section 106-2</i> prohibits disposal of sink water or other impure liquid to run from a hose, barn or lot into the street, and <i>Section 106-6</i> prohibits unlawful dumping including solid and liquid waste material.</li> <li>Under the General Bylaws, <i>Use of Waterways, Section 170-11</i> prohibits discharge or disposal of fuel, oil, dead fish, offal, waste rubbish, debris or sweater in the waters, shores or foreshores of Mashpee.</li> <li>Language that allows the Town to take appropriate enforcement procedures and actions if needed, is allocated to the Board of Health, under Chapter 130 and the Health and Sanitation bylaw, and the Harbor Master under Section 170.</li> <li>Finally, under the Towns General Bylaws, <i>Article VI Department of Public Works</i> authority is given to the Director of Public Works to have full charge of all public ways, sidewalks, storm drains and maintenance of all Town buildings, except lands under the control of the Conservation Commission.</li> </ul>	Develop new bylaw or amendment to Health and Sanitation bylaw to meet 2003 permit requirements.
Revised					

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 11-14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
IDD3	Reduction of Direct Discharge	Public Works	Install drainage system to eliminate direct discharge	Completed major drainage improvement projects for parking lots at Quashnet School, John's Pond Beach and Great River Boat Ramps.  The Town has made substantial improvements to the stormwater systems in recent years. Since 2013 over 32 drainage projects have been completed, improving both drainage and water quality in sensitive watershed areas. The Town continues to inspect portions of the system each year and make repairs as needed as part of the ongoing stormwater system maintenance program.	Continue to install drainage during planned road construction projects, targeting improvements for both drainage and water quality in sensitive watershed areas.
Revised					
IDD4	Water Monitoring Program	Public Works; Shellfish	Develop volunteer monitoring program to test and identify pollutants and determine potential sources	Town and Mashpee Wampanoag Tribe monitor Santuit Pond to track water quality improvements due to installed BMPs.  The Shellfish Department continued limited testing of shellfish areas.  The Board of Health staff tests swimming beaches and follows up to track sources in the event of a sample exceedance.  Lakes and ponds in Mashpee are routinely tested as part of the Cape Cod Ponds and Lakes Stewardship program, coordinated with the University of Massachusetts Dartmouth SMAST program.	Continue ongoing water quality monitoring.  Work with partners such as the Mashpee Environmental Coalition, Mashpee Land Stewards, AmeriCorps Cape Cod and the Mashpee High School as part of complying with the new permit.
Revised					

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 11-14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
IDD5	Identification of Illicit Discharge	Public Works; Conservation	Identify illicit discharges, contact responsible party, and work to eliminate	Outfalls discharging to coastal waters are inspected by the Shellfish Director in conjunction with State Division of Marine Fisheries (DMF) personnel as part of a sanitary survey that is required on a regular basis to classify the sanitary condition of waters where shellfish are harvested for public consumption under the National Shellfish Sanitation Program (NSSP). Historically, field investigations have been utilized to track down and remove sources of high bacteria that can extend a distance up into the watershed. Recently there have been no sources identified.	As part of complying with the new permit, Mashpee will begin preparation of the IDDE plan and implementation of an IDDE program, including inspections of outfalls and sampling as necessary to capture flow during dry weather conditions.
Revised					

### 3a. Additions

No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11-14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
CSR1	Review and Amendment of Existing Regulations	Public Works; Planning; Conservation	Review regulations for existing controls and amend as necessary	Stormwater Management Zoning Bylaw in effect (approved 1999) Erosion and Sedimentation Control General Bylaw in effect (approved 2006). Subdivision Rules and Regulations-Stormwater Standards in effect (approved 2010 and updated 2014) Mashpee Wetlands Bylaw in effect (approved 1988)	Expand Sediment and Erosion control bylaw to include requirements for the control of construction waste.  Work with Conservation Agent to review and amend Wetlands regulations if necessary.
Revised					
CSR2	Inspection Program	Public Works; Planning; Conservation; Building	Develop inspection program to ensure compliance with required controls	The Town adequately regulates 100% of construction starts. The DPW enforces the Town's erosion and sediment control bylaw including reviewing plans, inspecting the site and enforcing any instance of non-compliance. Erosion control under the Subdivision Rules and Regulations is enforced by the Building Inspector, and the Wetlands Bylaw is enforced by the Conservation Commission Agent including inspections before, during and after construction. Certificate of Compliance are not issued until the stormwater system is completed and operating as designed.	Continue to inspect sites for compliance with the Town's bylaws by enforcing agent.
Revised					

#### 4a. Additions

No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.

## 5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11-14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
PCR1	Review of Existing Regulations	Public Works; Planning; Conservation	Review regulations for existing controls and amend as necessary	100 % of development and redevelopment projects are adequately regulated for post construction stormwater control, including site inspection for proper BMP installation and operation. BMP Low Impact Development practices are permitted and encouraged, and BMP maintenance is required as part of the permit process. See MCM#4 above.	See MCM#4 above.
Revised					

### 5a. Additions

No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.

## 6. Pollution Prevention and Good Housekeeping in Municipal Operations

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 11-14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
MGH1	Street Sweeping	Public Works	Continue to sweep Town roads annually	All Town roads are swept annually, (76± miles) each spring after winter sanding. Services for rotary brush sweeping are contracted.	Continue sweeping program.
Revised					
MGH2	Catch Basin Cleaning	Public Works	Continue to clean catch basins annually	Approximately 2,000 catch basins are cleaned annually using contracted services (half cleaned in Fall and half in Spring). Street sweepings and catch basin cleaning are disposed of at the Mashpee Transfer Station or re-used following MassDEP approved methods.	Continue semi-annual catch basin cleaning program.
Revised					
MGH3	Spill Training	Public Works	Provide annual training to employees	Provided annual training to DPW employees on spill prevention and spill clean-up.	Continue annual training for all employees involved in handling oil including fueling vehicles.
Revised					
MGH4	Minimization of Road Salt Use	Public Works	Continue to minimize application of salt on roads and parking lots	. Deicing best practices including using road salt, a sand/salt mixture and mixing road salt with Safe Melt, an agricultural byproduct. All salt/chemical piles are stored under cover.	Continue to track applications and maintain low salt use.
Revised					

### 6a. Additions

No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.

## 7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11-14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
IDD3	Water Monitoring Program	Public Works; Shellfish		See MCM#3 above	
Revised					
IDD2	Reduction of Direct Discharge	Public Works		See MCM#3 above	
Revised					
TMDL1	Development and Implementation of BMPs	Public Works; Shellfish	Develop BMPs to address the other sources of pollutants exceeding the TMDLs for a water body	<p>Improved stormwater drainage at over 32 locations including locations with direct discharge to surface waters. Drainage improvements in sensitive resource areas address bacteria and nutrient removal.</p> <p>In 2015, the Town passed a <i>Nitrogen Control Bylaw</i> (Chapter 107). This bylaw creates performance standards for certain land uses to control the application of nitrogen fertilizers by restricting the timing and establishing setbacks to sensitive resources. There are a number of exemptions including uses already regulated by the Massachusetts Department of Agricultural Resource Fertilizer Regulations, compost or liquid seaweed with less than 5% total nitrogen, and establishing new lawns. Golf courses are restricted to using 85% slow release, water soluble forms on greens or fairways.</p>	<p>Continue to implement nitrogen control bylaw, and remove sources of direct discharge to surface waters through drainage upgrades.</p> <p>Continue to install and maintain mutt mitt dispensers on municipal properties where dogs are allowed.</p>

Revised			Nitrogen Control Bylaw in effect (2015)  Mutt Mitt Dispensers Installed	Town complied with bylaw for all municipal turf management operations.  Mutt mitt dispensers installed and maintained address adverse impacts from pet waste.	
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#### **7a. Additions**

No new BMPs are being added at this time. The Town of Mashpee will reevaluate its Stormwater Management Program for consistency with the new general permit requirements and add or modify BMPs as needed as part of developing the NOI and SWMP for the new permit.

#### **7b. WLA Assessment**

A WLA has not yet been conducted.

#### **Part IV. Summary of Information Collected and Analyzed**

No information collected.