

Municipality/Organization: Town of Plymouth
EPA NPDES Permit Number: MAR 041150
MaDEP Transmittal Number: W-40949
**Annual Report Number
& Reporting Period:** No.10: March13 – March14

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Jonathan Beder **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: Jonathan Beder
Title: DPW Director
Date: 4/28/19

Part II. Self-Assessment

The Town of Plymouth has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions, except for the following provisions:

Part 1.B.2 (e) (Vi)

The Town of Plymouth's permit eligibility with regard to the Endangered Species Act is still pending at the time of our NOI submission. Our MS4 discharges will have the potential to impact the existence of specific species protected under the Endangered Species Act. We will investigate more on this issue of concern.

Part 1.B.2 (k)

Some discharges have been determined (through DMF Sanitary Survey) to be contributing to exceedance of water quality standards in Plymouth Harbor. These discharges have been made priorities in our NPS Pollution Grant Program.

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 10
1-1	Educational Flyer	Town Engineer/ Town Manager	Post in all schools & Town buildings	The Town's Department of Marine & Environmental Affairs created an educational watershed management brochure containing tips on reducing pollutants in stormwater runoff. This brochure is made available at Town Hall. The Department of Marine & Environmental Affairs is active in updating the stormwater management webpage which includes interactive computer games for children, educational information on stormwater and background of stormwater permit with reports available for download. The SuAsCo stormwater display have been rotated in various locations through Town Hall and also displayed at Department of Public Works Educational Day.
Revised				
1-2	Form Public Education Task Force	Town Engineer/ Environmental Manager	Participation in town wide events & schools	The Department of Marine & Environmental Affairs actively participates in educational opportunities with local watershed groups and citizens concerning stormwater issues. The Town worked with the Herring Ponds Association in the continuation of the distribution of watershed management postcards for the Herring Pond Watershed. In addition, The Herring Pond Association created and distributed watershed books.
Revised	Educational Workshops	Town Engineer/ Environmental Manager	Schedule Workshops	The Herring Ponds Watershed Association and the Six Ponds Watershed Association has held Association meetings to discuss and review stormwater issues in their watershed.
1-3	Air stormwater message on local cable access channel	Town Engineer	Post one message every month	Service announcements for the Town's Household Hazardous Waste Days are broadcasted spring and fall.
Revised				
1-4	Storm Drain Stenciling	Town Engineer/Conservation Comm./Environmental Manager	Stencil Storm Drains with Messages (25% each year)	The Town continues to utilize watershed groups, volunteers as well as staff to continue the ongoing storm drain marker program.
Revised	Storm drain Markers	Environmental Manager	50 per year	

1-5	Map outfalls and receiving waters	Town Engineer	Map of discharge pipes to waters & wetland (20%/yr.)	Completed
Revised				
Revised				

1a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 10
1a.	Media coverage	Town Engineer	Story coverage on NPS Pollution Projects.	The bioretention and rain garden projects the Town DPW has completed have become an educational piece for various workshops held in the area. These bioretention areas, which are in or close to downtown Plymouth, have become destinations for educational workshops.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goals – Permit Year 10
2-1 Revised	Hazardous waste collection	DPW Recycling Coordinator DPW	Twice/yr. (min.)	Two events were held in this permit period.
2-2 Revised	Volunteer Water Quality Monitoring Rain Barrel Program	Environmental Management	Level of participation	The Town continues to work with four Pond Associations as well as other interested volunteers for water quality monitoring. The Town funds the sampling and have requested an increase in the budget for FY14.
2-3 Revised	Citizen Stormwater Committee/Lake Associations	Town Engineer/Natural Resources Officer Town Engineer/Environmental Manager	Hold meeting to plan for stormwater issues/mgmt.	The Town continues to work closely with the Herring Ponds Association whom hold numerous meetings regarding water quality and stormwater management issues in the watershed. The Town also works closely with 3 other Watershed Associations and assists on remediating stormwater issues to the best ability.
2-4 Revised	“Adopt a Storm Drain Program”	Town Engineer/Natural Resources Officer	Participation in Community Cleanups	Several community based cleanups were held during this permit year. Over 1,575 10 gallon bags were collected for spring and fall 2013 cleanups.
2-5 Revised	Citizen watch Groups	Town Engineer/Natural Resource Officer	Aid Local Enforcement author. In the identification of polluters	The Town Conservation and Planning Department as well as the Department of Marine & Environmental Affairs continue to work closely with the Network of Open Space Friends in coordinating cleanups, stewardship as well as many other activities. The Department of Marine & Environmental Affairs has a Natural Resource Warden whom has walked and evaluated land issues including dumping and ATV use which causes erosion.
Revised				
Revised				

3. Ellicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10
3-1	Develop illicit dischg. id. & elim. plan	Town Engineer/BOH/ Environmental Manager/ Planning Bd.	Make recommendations for the plan	The Town DPW Sewer Division utilizes the Illicit Discharge and Elimination Plan under the Sewer Division Rules & Regulations.
Revised	Screen outfalls for Illicit connections	Public Works	Screen outfalls by Winter 07-08	
3-2	Drainage Network Mapping	Town Engineer	Drainage of urbanized areas	Mapping of outfalls and catch basins were completed in previous years.
Revised				
3-3	Public Info. on illicit connections/illegal discharges	Town Engineer/Board of Health	Educating the public-hazards associated with these activities	Section twelve of the Sewer Division Rules & Regulations has been approved and states that surface runoff is prohibited.
Revised				
3-4	Develop/Modify general illicit discharge bylaw	BOH/Planning Board	Developing/modifying the plan	The guide for Storm Drainage Facilities that address illicit discharges is now being utilized.
Revised				
3-5	Present Bylaw for town meeting action	BOH/Planning Board	Make presentations for town Meeting action	Section twelve of the Sewer Division Rules & Regulations has been approved in previous years and states that surface runoff is prohibited. The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and is being utilized.
Revised				

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10
4-1	Wetlands by-law for stormwater management	Conservation Commission	Town Meeting Action	This by-law is now being enforced by the Conservation Commission. An increase of 10ft in the no-touch buffer was approved as part of the Towns Wetland Protection Act Bylaw.
Revised				
4-2	Subdivision regulations for stormwater management	Planning Board	Change subdivision Rules and Regulations	The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and are now being utilized. The DPW Engineering and Planning Departments worked in cooperation to complete the “Guide for the Design of Storm Drainage Facilities in the Town of Plymouth, Massachusetts”. The guide is now part of the Planning Subdivision Regulations as well as DPW policy. The guidelines include, but are not limited to, the following items: • Acceptable Best management Practices with specific reference to State of Massachusetts BMP standards including Low Impact Standards and Conventional Standards for various structures and functions including nutrient removal in harbors and ponds, total suspended solids(TSS) removal in streams, ground water recharge, resource crossing regulations and standards including fish passage and openness ratios, and removal rates; • Plant selection guidelines for vegetated BMPs; • Water quality and water quantity management guidelines; • Design guidelines for BMPs Low Impact Design (LID) standards and Conventional Standard Design standards for various structures including those functions listed above; • Selection criteria for BMPs; • Incentives for implementing LID practices.
Revised				
4-3	Erosion control by-law	Planning/Zoning Board of Appeals	Town Meeting Action	The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and are now being utilized.

Revised					
4-4	Reporting hotline	Town Engineer/Planning Board	Set up procedures in response to info submitted by public	Residents contact DPW Highway Administration. The information is submitted to the Highway Superintendent for remediation.	
Revised					
4-5	Site plan review/constr. Site inspection program	Town Engineer, Planner/Building Inspector	Review all plans, inspect, & visit construction site	These regulations are now being utilized.	
Revised					

4a. Additions – Projects

4a-1	Drainage Project – Water St Roundabout to Nelson St	DPW		The roadway is being planned to be re-constructed and drainage improvements provided to properly treat stormwater prior to discharge to existing outfalls in Plymouth Harbor. Drainage project to install deep sump catch basins with eliminator hooded outlets. The project also consists of roadway improvements which will create a net decrease in impervious area by creating green space by eliminating existing parking areas and re-aligning the roadway. Project Under Construction.
4a-2	Drainage Project – 590 Federal Furnace Rd	DPW		Drainage Project at 590 Federal Furnace Road was constructed by Town forces installing two precast catch basins with four foot sump and eliminator hooded outlet connecting to stormwater infiltration system. Project Partially Complete.
4a-3	Drainage Project – George St	DPW		Drainage project currently under design. The roadway is constantly flooded and the existing drainage systems have failed. The existing drainage systems consist of leaching catch basins and paved scuppers. The proposed design will include deep sump hooded catch basins, water quality inlets and infiltration systems. Project Under Design.
4a-4	Drainage Project – Valley Road & Roxy Cahoon Road	DPW		The existing gravel roadways do not have any drainage systems. The stormwater on this roadway is currently sheeted off the gravel way to low points on the shoulder through earthen swales and cuts in the banking. The existing gravel ways will be widened and paved. The roadway improvements will direct stormwater to deep sump hooded catch basins, water quality inlets/sediment forebay, and underground/above ground infiltration systems. Project To Start This Summer.

4a-5	Drainage Project – Water Street	DPW/Department of Marine & Environmental Affairs	Design for the Water Street Bridge is nearing completion and includes stormwater improvements to Town Brook and Plymouth Harbor. The proposed drainage improvements will eliminate any untreated discharges to Plymouth Harbor within the project area (Sandwich St Intersection to Leyden St Intersection). Deep sump catch basins with 4 foot sumps, eliminator hooded outlets and water quality tanks will be provided in the design. The roadway is being planned to be re-constructed and drainage improvements provided to properly treat stormwater prior to discharge to existing outfalls in Plymouth Harbor. Project To Start This Fall.
4a-6	Project – Stephens Field Building Demolition and Soil Excavation	Department of Marine & Environmental Affairs	The Town has completed the demolition of the former DPW A.K. Finney building and is currently working on the soil excavation of petroleum impacted soil. The soil excavation will be completed by the end of April 2014.
4a-7	UST Removal – Town Wharf / Plymouth Harbor	Department of Marine & Environmental Affairs	Funding is in place for the removal of UST removal and replacement. The project is currently under construction. The UST tanks have been removed and replaced with new double wall tanks. Drainage improvements will consist of new trench drain and existing catch basin being piped to a new water quality tank before discharging to Plymouth Harbor. The existing out fall is also being re-constructed. These improvements will eliminate any untreated discharge to the harbor within this project area. Project Completed.
4a-8	<u>Plymouth Harbor Pump-Out Facility</u> <u>Pump Replacement</u>	Department of Marine & Environmental Affairs	The Town of Plymouth Department of Marine & Environmental Affairs received a Coastal Pollution Remediation Grant for the purchase and installation of a replacement pump at the Plymouth Harbor Pump-Out Shoreside Facility. The Town has been operating the Shoreside Pump-Out Facility and the Boat Pump-Out program at no cost to the user for several years. This program has aided in the reduction of potential vessel discharge into the harbor thereby reducing pollutants, pathogens and nutrients, from entering the waters of the harbor. The goal of this project is to support efforts made to improve water quality in the harbor for a number of environmental, recreational and economic resources. This project will also aid in improving water quality for opening Plymouth Harbor to shellfishing. For decades the Division of Marine Fisheries has closed approximately 1,887 acres of Plymouth Harbor to shellfishing. There are approximately 810 acres of suitable shellfish habitat in the closed area. The project will be completed by June 30, 2014.
4a-9	Off-Billington Street Dam Removal – Town Brook	Department of Marine & Environmental Affairs	The Town has removed the Off-Billington Street Dam along Town Brook, which outlets at Plymouth Harbor. The impounded sediment has been removed, stream restored, box culvert replaced dam, new bridge and new utilities including water and sewer have been installed.

4a-10	Drainage Project - Carter's Bridge Road	DPW	Drainage Project at 62 Carter's Bridge Road design has been completed. There are two existing outfalls which discharge stormwater without treatment to Great Herring Pond. The proposed drainage improvements include the addition of 6 foot diameter drain manhole with a 4 foot sump with eliminator hooded outlets to provide treatment prior to discharging to the pond. The existing outfalls will also receive new rip-rap stabilization with filter fabric. Project Complete.
4a-11	Drainage Project -- Packard Street	DPW	The proposed plan calls for the roadway to be re-constructed and new drainage systems to be installed. The drainage systems will consist of deep sump catch basins with eliminator hooded outlets which will then discharge to underground/above ground infiltration systems to promote ground water recharge with proper stormwater treatment. The project was started last fall with the installation of the proposed drainage systems and binder asphalt has been placed. The finish pavement and slope stabilization will be completed this year. Project Partially Completed.
4a-12	Drainage Project -- Strand Avenue	DPW	Drainage project at 25 to 60 Strand Avenue design is completed. The existing roadway will be re-constructed and new drainage system will be provided. The drainage systems will consist of deep sump catch basins with eliminator hooded outlets which will then discharge to under ground infiltration systems to promote ground water recharge with proper stormwater treatment. Project is scheduled for this spring. Project Completed.
4a-13	White Island Pond Phosphorus Inactivation Project	Department of Marine & Environmental Affairs	The goal of the White Island Pond Phosphorus Inactivation Project is to remove White Island Pond from the 303d list of impaired waters by addressing the remaining major contributor of total phosphorus, internal sediment. The MassDEP TMDL specifies the internal sediment source is a large component of the total phosphorus budget and an alum treatment or other sediment phosphorus control is needed. The treatment was completed and the Town and DEP are now conducting the monitoring of clarity and phosphorus levels. Project Completed.
4a-14	Samoset St Re-Construction	DPW/State TIP Project	The roadway is being planned to be re-constructed and drainage improvements provided to properly treat stormwater prior to discharge to existing outfalls in Plymouth Harbor. Drainage project to install deep sump catch basins with eliminator hooded outlets. Project Design Completed.

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 10
5-1	Stormwater Manage. By-law- Development Construction Site Runoff Control and Pretreatment	Planning/Zoning Bd. & Conservation Commission	Strategies to be developed	The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services.
Revised				
5-2	Stormwater Manage. By-law Development Post Construction Stormwater Management	Planning/Zoning Bd. & Conservation Commission	Formulation of the By-law	The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services.
Revised				
5-3	Conservation Comm. Wetlands By-law	Planning/Zoning Bd. & Conservation Commission	Presentation for Town Meeting Action	These regulations are now being utilized.
Revised				
Revised				

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s)- Permit Year 10
6-1	Street sweeping program	Highway	Spring annual sweeping record sweeping as needed	Completed annual sweeping program. Sweeping program is now in place.
Revised				
6-2	Catch basin/drain cleaning	Highway	The Town has approved funding for a new jet rod/vactor truck for the drainage maintenance	Catch basins were cleaned during the permit period.
Revised			Clean all catch basins once every 3 years.	
6-3	Annual training at town facilities	Town Engineer	Various Work Shops were attended	
Revised				
6-4	Policy Guide	Town Engineer	Developing the Policy Guide	The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and is being utilized.
Revised	O & M program for town-owned structural BMP's		Implement O & M program by Spring 06	The Town rehabilitated an existing jet rod/vactor truck for use in O & M of stormwater structures. This allows the Town to have two such pieces of equipment. Along with a clamshell bucket truck for sediment removal from catch basins. The Town has approved funding for a new jet rod/vactor truck and street sweeper for the DPW drainage and roadway maintenance.
6-5	Permit filing for the town's activities related to Phase II	Town Engineer	Permits Filed as needed	The Town has developed a general stormwater operation and maintenance permit in coordination with Engineering and the Conservation Commission.

6a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s)- Permit Year 10
6.6	Vehicle washing	Public Works	Implemented washing policy	Continuing program.
6.7	Implement Integrated Pest Management (IPM) at Town Facilities	Parks & Recreation	Train facility employees and practice IPM town-wide by Summer 2008.	Inventory current chemicals, quantities, and practices used on town parcels. Training has not been completed.
6.8	Development of Spill Prevention, Control and Countermeasure Plan (SPCC)	DPW	Complete a SPCC plan.	The SPCC for the DPW facility has been completed.
6.9	Environmental Audit at DPW Facility	DPW/Environmental Management	Complete the Environmental Audit of the DPW Facility.	The Environmental Audit of the DPW Facility at Camelot Park has been completed.
6.10	UST for oil and waste at DPW Facility	DPW	Installation of UST	Installation of UST's for oil and waste oil at DPW Facility.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) << if applicable >>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Planned Activities – Permit Year 10
	Development of the Nitrogen Management Analysis for Plymouth-Duxbury Harbor-Kingston Bay Embayment System is underway.	DPW – Department of Marine & Environmental Affairs		The Town completed the Land Use Data Collection, Watershed Delineation, Part 1 and Part 2 of the Cumulative Nitrogen Loading Determination for the MEP Harbor Analysis. The monitoring for the Hydrodynamic Model has been completed and reporting will be completed by summer 2014. The last part of the MEP analysis will be underway in summer of 2014. The Town is applying for a section 319 grant to fund the development of the Total Maximum Daily Load and update to the Town of Plymouth's Comprehensive Waste Management Plan.

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

As noted in the Mapping Section below and in the attached map the town has completed the outfall mapping and is 100% complete with the catch basin mapping.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures	(\$)	

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned	(7 mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored	(2 days)	
▪ community participation	303 vehicles	
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	

Legal/Regulatory

	In Place			Prior to		Under
	Phase II	Review	Drafted	Adopted		
Regulatory Mechanism Status (indicate with “X”)						
▪ Illicit Discharge Detection & Elimination						X
▪ Erosion & Sediment Control						X
▪ Post-Development Stormwater Management						X
Accompanying Regulation Status (indicate with “X”)						
▪ Illicit Discharge Detection & Elimination						
▪ Erosion & Sediment Control						
▪ Post-Development Stormwater Management						

Mapping and Illicit Discharges

Outfall mapping complete		(100%)	
Estimated or actual number of outfalls		(#350)	
System-Wide mapping complete		(100%)	
Mapping method(s)			
▪ Paper/Mylar		(NA)	
▪ CADD		(NA)	
▪ GIS		(100%)	
Outfalls inspected/screened		(100%)	mapped and conditions noted
Illicit discharges identified		(#0)	
Illicit connections removed		(#0)	
		(est. gpd)	
% of population on sewer		(5%)	
% of population on septic systems		(95%)	

Construction

Number of construction starts (>1-acre)	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	
Site inspections completed	(# or %)	
Tickets/Stop work orders issued	(# or %)	
Fines collected	(# and \$)	
Complaints/concerns received from public	(#)	

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections completed	(# or %)	
Estimated volume of stormwater recharged	(gpy)	

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	
Total number of structures cleaned	(#)	
Storm drain cleaned	(LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		
Cost of screenings disposal	(\$)	

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	
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Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)
Qty. of sand/debris collected by sweeping	(lbs. or tons)
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)
Cost of sweepings disposal	(\$)
Vacuum street sweepers purchased/leased	(#)
Vacuum street sweepers specified in contracts	(y/n)

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)	
▪ Fertilizers	(lbs. or %)
▪ Herbicides	(lbs. or %)
▪ Pesticides	(lbs. or %)

Anti-/De-Icing products and ratios	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand
Pre-wetting techniques utilized	(y/n)
Manual control spreaders used	(y/n)
Automatic or Zero-velocity spreaders used	(y/n)
Estimated net reduction in typical year salt application	(lbs. or %)
Salt pile(s) covered in storage shed(s)	(y/n)
Storage shed(s) in design or under construction	(y/n)