

Municipality/Organization: Town of Braintree, MA

EPA NPDES Permit Number: [MAR041029]

MaDEP Transmittal Number: W- 041000 (for No.1)

**Annual Report Number
& Reporting Period:** No. 15: March 2017-March 2018

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Bob Campbell **Title:** Town Engineer

Telephone #: 781-794-8012 **Email:** rcampbell@braintreema.gov

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: Robert P. Campbell, P.E.

Title: Town Engineer

Date: June 28, 2018

ATTACHMENT

DECLARATION

I declare under penalty of perjury that I am Robert P. Campbell, P.E., the Town Engineer of the Town of Braintree, Massachusetts, that I am authorized to respond on behalf of the Town and that the foregoing is a complete, true and correct response.

Executed on June 28, 2018

Robert P. Campbell 6/29/18

Robert P. Campbell P.E., Town Engineer

Part II. Self-Assessment

The Town of Braintree is committed to protection of our water resources and is in compliance with all permit conditions, except for the following provisions:

As part of PP3 we were to incorporate stormwater curriculum into the public school system, but that proved to be unworkable. The schools already have environmental awareness built into their curriculum other than Planning or Public Works suggested items.

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
PE 1	Partner w/ local organization		Continue to work with partners	The Planning & Community Development Department continues to work on environmental issues with the Fore River Watershed Association, Sustainable Braintree, the East Braintree Civic Association and the environmental clubs at Thayer Academy.	Continue to work with partners
Revised		<i>Christine Stickney – Planning and Community Development</i>			
PE 2	Develop public education brochures/press releases		Continue to distribute stormwater-related educational materials.	Included stormwater information in periodic mailings.	Include brochures in water department periodic mailings, and target 1 message each to two of the following groups: residential, commercial/institutional, construction and industrial audiences.
Revised		<i>James Arsenault - DPW</i>			
PE 3	Classroom instruction		Work with schools to incorporate into curriculum	East Middle School expansion will include rain gardens and adjacent “outdoor classrooms.”	Work with schools to incorporate into curriculum
Revised		<i>Christine Stickney – Planning and Community Development</i>			

PE 4	Develop web page		Maintain and update webpage	An educational webpage on stormwater was posted to the Town website and can be viewed at http://www.townofbraintreegov.org/Stormwater.htm The Wetlands Protection Act and local regulations are posted and updated on the Town's web site. Results of water quality testing at Town beaches are also posted and maintained.	Maintain and update webpage. Add the annual report, and the SWMP when available.
Revised		<i>Christine Stickney – Planning and Community Development</i>			
PE 5	Cable Access TV Show				Continue to supply storm-water topic information to local cable broadcasters.
Revised		<i>James Arsenault - DPW</i>			

1a. Additions

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
PP 1, PP 2 Revised	Partner w/ local organization	<i>Christine Stickney – Planning and Community Development</i>	Continue partnerships	The Town-sponsored annual beautification day included cleanups throughout Town. Various civic groups and residents participated.	Continue partnership with civic groups and residents.
PP 4 Revised	Organize public meetings and panels/	<i>James Arsenault - DPW</i>	Discussion of stormwater at public meeting	Frequent televised meetings were held with the Municipal Council to advance the updated Stormwater ordinance, the Stormwater Utility and its funding and staffing. Stormwater management is a frequent topic of discussion in many of the televised meetings of the Braintree Planning Board and meetings of the Conservation Commission	Town Councilors will annually incorporate stormwater discussions into one or more of their meetings.
PP 5 Revised	Town Departments Involved	<i>James Arsenault - DPW</i>	Continue to involve departments	Stormwater management continues to be a frequent topic at the DPW Department weekly meetings. Also, The DPW and other departments work on various BMP projects, “Beautify Braintree Day” and the overall stormwater program.	Continue to involve departments

2a. Additions

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
ID 1	Develop a comprehensive Storm Drain Map for the Town		Continue to update and infill data, integrate into GIS	Devoted much greater effort into integration of stormwater system information, revealing need for even more.	Continue to update and infill data, integrate into GIS
Revised		<i>James Arsenault - DPW</i>			
ID 2	Implement a Town Bylaw		Reevaluate the need for a distinct IDDE bylaw	The Town has hired a consultant, Brown and Caldwell, to develop an effective IDDE program to make us much more proactive. The IDDE ordinance has been incorporated into an overall stormwater regulation intended to keep us compliant with the new Permit.	Continue refinement of the IDDE ordinance and overall stormwater regulation for Council and Mayoral consideration.
Revised		<i>Christine Stickney – Planning and Community Development</i>			
ID 3	Perform an illicit discharge detection campaign		Continue	The Town, with guidance from Brown and Caldwell has developed a proactive, written plan for inspection and sampling, particularly dry weather discharges as part of new MS4 requirements.	Present the IDDE plan and stormwater regulation to the Mayor and Council for public input. Tweak with results of public meeting. Check 1/3 rd of the drainage outfalls once a year. 190 checks were done this year, with 18 outfalls having running water, only 3 requiring follow-up.
Revised		<i>James Arsenault - DPW</i>			
ID 4	Correct Illicit Discharges	<i>James Arsenault - DPW</i>	Continue	3 illicit discharges were confirmed. 1 involved seepage from a failed sewer pump on private property and	Fix illicit discharges confirmed in accordance with plan, and in public view / forums, to promote awareness.

Revised				was repaired by the owner. The other two were at swamp area discharge points where no illicit discharges were identified. Believed to have been related to naturally occurring animal wastes.	
ID 5	Educate Citizens	<i>James Arsenault - DPW</i>	Re-distribute fliers	Continue to think about finding different ways to educating citizens about illicit discharges. Installed sewer service cleanouts at several locations to monitor sump pump operations that could overtax sewers.	Edit DCR brochure, put it on web site, place at library and Town Hall. Continue to install sewer cleanouts.
Revised					

3a. Additions

				Compiled documentation of SSO's over the last 5 years.	Continue to monitor documentation of SSO's.
				Developed an ordinance to obtain legal authority to prohibit, investigate and remove illicit discharges.	Continue IDDE efforts as follow: <ul style="list-style-type: none"> a. Assess, rank and prioritize stormwater catchment areas. b. Perform stormwater outfall screening and sampling during dry and wet weather conditions. c. Remove illicit discharges and confirm their removal.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
CS 1	Implement by-law related to construction runoff control	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Town had reviewed successful stormwater regulations from other communities and developed and implemented our own regulation. With the release of the new permit imminent we were able to incorporate modifications to keep compliant. We continued to implement grading/erosion control permits as well as stormwater review as part of general development review.	Continue to implement.
Revised					
CS 2	Incorporate sanctions into By-Law to ensure compliance	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Conservation Commission and Planning Board also have authority to issue fines for non-compliance under the zoning bylaw and wetland bylaw. The new ordinance covers compliance outside of those processes.	Continue to implement.
Revised					
CS 3	Site Plan Review	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Planning Board continues to require applicants to comply with stormwater standards during the site plan review or special permit processes.	Continue to implement.
Revised					
CS 4	Site inspection and enforcement of control measures	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Conservation Commission and Planning Board continue to inspect and enforce on stormwater and erosion control issues.	Continue to implement

Revised		<i>Christine Stickney – Planning and Community Development</i>			
CS 5	Establish procedures to record and address public inquiries or concerns	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Planning and Community Development Department and Engineering Department respond to any public inquiries or concerns they receive.	Continue to implement
Revised					

4a. Additions

		<i>Christopher Griffin - Mayor's Office</i>		Continue to try to incorporate grassed areas alongside roadways but meeting significant resistance (and rejection) because people a.) do not want to maintain them and b.) often wish to use that area for parking, and c.) do not want pedestrian facilities pushed closer to their properties. A significant effort must be made to educate homeowners of the Town-wide importance of these efforts rather than to try to address them one neighborhood at a time. Town is developing a "Complete Streets" policy to address these issues.	Continue to assess current street design and parking lot guidelines and other local requirements that affect creation of impervious cover and modify Town by-laws, guidelines and regulations as appropriate. Continue to assess feasibility of allowing green infrastructure practices and modify Town by-laws, guidelines and regulations as appropriate. Update Site Plan Review requirements to track impervious area and directly connected impervious area and a stormwater BMP operations and maintenance manual.

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
PC 1	Evaluate, enhance and implement zoning requirements		Continue to implement	The Planning Board and Conservation Commission review plans for post-construction stormwater management.	Continue to implement
Revised		<i>Christine Stickney – Planning and Community Development</i>			
PC 2	Develop regulations requiring specific structural storm water controls/		Continue to implement	The Conservation Commission and Planning Board continue to require adherence to the DEP's stormwater standards. Said standards require achieving specific standards through the use of a menu of Best Management Practices and structures.	Continue to implement
Revised		<i>Christine Stickney – Planning and Community Development</i>			
PC 3	Develop review and inspection procedures for private storm water systems		Continue inspection procedure	Conditions of approval on all special permits, site plan reviews and subdivision decisions and Conservation Commission Orders of Conditions require the applicant or their successors to provide and continually implement a stormwater management plan. Conditions require regular inspections and detailed cleanliness standards for paved areas, stormwater structures and pipes, and detention basins.	Continue inspection procedure
Revised		<i>Christine Stickney – Planning and Community Development</i>			

5a. Additions

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
GH 1	Audit of Town Facilities		Implement audit of Town maintenance activities and operations that have potential to contribute pollutants to stormwater runoff	Setting up audit of Town Facilities. Annually update materials stored, review secondary containment, floor drains, traps, SOP's	Continue to update materials stored, and assess effectiveness of secondary containment, floor drains, traps, SOP's
Revised		<i>James Arsenault - DPW</i>			
GH 2	Operation and Maintenance Program		Continue to implement	New Town standard frame & grate has "dump no waste...drains to waterway" cast into grate. The new grates are being installed at all road reconstruction projects and anywhere that catchbasins are being repaired.	Continue to implement. Develop Stormwater Pollution Prevention Plans for applicable municipal facilities. Assess Town properties for retrofitting with BMP's where feasible. Add more good housekeeping practices to all municipal buildings/facilities. Annually inspect Town's stormwater treatment structures.
Revised		<i>James Arsenault - DPW</i>			
GH 3	Employee Training Programs		Continue to implement	Monitor function of catchbasins near facilities... no dumping of wash waters, etc.	Re- present "Storm Watch" Everyday BMP's, employee training package by EXCAL Visual.
Revised		<i>James Arsenault - DPW</i>			
GH 4	Recycling Program		Monitor and enhance recycling program	The Single Stream recycling has made it easier to recycle in every home in town. Participation is growing.	Monitor and enhance recycling program

Revised		<i>James Arsenault - DPW</i>			
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6a. Additions

				Have developed ordinance to require appropriate operation and maintenance of stormwater controls and for Town oversight.	Implement the ordinance.

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)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

The Town hired a consultant, Brown and Caldwell, for the task of collecting data and analyzing the current status of our MS4 operations and how to transition to the new Permit. Many of their conclusions and recommendations are incorporated into this annual report. The analysis will also be utilized to secure council action to create and fund the framework for MS4 operations going forward.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	Y
Annual program budget/expenditures	(\$)	\$100,000

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	10-12%
Stormwater management committee established	(y/n)	Not per se
Stream teams established or supported	(# or y/n)	Y
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	0.5 – 1.0 mi.
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	2
▪ community participation	(%)	3.5% (very good)
▪ material collected	(tons or gal)	8 tons
School curricula implemented	(y/n)	N

Legal/Regulatory

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

Mapping and Illicit Discharges

Outfall mapping complete	(%)	99%
Estimated or actual number of outfalls	(#)	253
System-Wide mapping complete	(*As detail is added more omissions apparent.)	(%) 96% *
Mapping method(s)		
▪ Paper/Mylar	(%)	80
▪ CADD	(%)	90%*
▪ GIS	(%)	90%*
Outfalls inspected/screened	(# or %)	190
Illicit discharges identified	(#)	1
Illicit connections removed	(#) (est. gpd)	1 (seepage)
% of population on sewer	(%)	99
% of population on septic systems	(%)	1

Construction

Number of construction starts (>1-acre) (Independence Avenue- straddles town line)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100
Site inspections completed	(# or %)	dozens
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and \$)	0
Complaints/concerns received from public	(#)	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100%
Site inspections completed	(# or %)	100%
Estimated volume of stormwater recharged	(gpy)	Not tracked

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	0.33 /year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	0.33/year
Total number of structures cleaned	(#)	750
Storm drain cleaned	(LF or mi.)	~3000 lf
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	~900 tons
Disposal or use of screenings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)	compost	750 cy
Cost of screenings disposal	(\$)	\$20,000

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	2
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	2
Qty. of sand/debris collected by sweeping	(lbs. or tons)	2700 t/yr
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	SEMASS
Cost of sweepings disposal	(\$)	N/A
Vacuum street sweepers purchased/leased	(#)	0
Vacuum street sweepers specified in contracts	(y/n)	N

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)			
▪ Fertilizers	Ball fields about 11,000 lbs every year is needed	(lbs. or %)	Can't compare
▪ Herbicides	600 gallons per year along curb lines	(lbs. or %)	Can't compare
▪ Pesticides		(lbs. or %)	N/A

Anti-/De-Icing products and ratios	% NaCl	89%
	% CaCl ₂	
	% MgCl ₂	10%(~3700Gal)
	% CMA	0%
	% Kac	
	% KCl	
	% Sand	1%
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	N
Estimated net reduction in typical year salt application	(lbs. or %)	Can't compare
Salt pile(s) covered in storage shed(s) (New 2800 ton shed constructed-no more outdoor)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N