

**Municipality/Organization:**     **Town of Braintree, MA**

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**EPA NPDES Permit Number:** [MAR041029]

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

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**Annual Report Number  
& Reporting Period:**                    **No. 14: March 2016-March 2017**

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## **NPDES PII Small MS4 General Permit Annual Report**

### **Part I. General Information**

**Contact Person:** Bob Campbell

**Title:** Town Engineer

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**Telephone #:** 781-794-8012

**Email:** rcampbell@braintreema.gov

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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:**

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**Printed Name:** Robert P. Campbell, P.E.

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**Title:** Town Engineer

**Date:** June 28, 2017

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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, 2017

A handwritten signature in black ink that reads "Robert P. Campbell". The signature is written in a cursive style with a large, stylized 'R' and 'C'.

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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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
PE 1	<b>Partner w/ local organization</b>		Continue to work with partners	The Planning & Community Development Department coordinated with the Fore River Watershed Association and Sustainable Braintree on a well-attended Monaquot River clean-up. The Department continues to work on environmental issues with these groups as well as 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	<b>Develop public education brochures/press releases</b>		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	<b>Classroom instruction</b>		Work with schools to incorporate into curriculum	The Braintree High School Environmental Club is focusing on stormwater management and planning a rain garden on school property.	Work with schools to incorporate into curriculum
Revised		<i>Christine Stickney – Planning and Community Development</i>			

PE 4	<b>Develop web page</b>		Maintain and update webpage	An educational webpage on stormwater was posted to the Town website and can be viewed at <a href="http://www.townofbraintreegov.org/Stormwater.htm">http://www.townofbraintreegov.org/Stormwater.htm</a>	Maintain and update webpage. Add the annual report, and the SWMP when available.
Revised		<i>Christine Stickney – Planning and Community Development</i>		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.	
PE 5	<b>Cable Access TV Show</b>			Sent DVD to BCAM for intermittent broadcast.	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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
PP 1, PP 2 Revised	<b>Partner w/ local organization</b>		Continue partnerships	The Town-sponsored annual beautification day included clean-ups throughout Town. Various civic groups and residents participated.	Continue partnership with civic groups and residents.
		<i>Christine Stickney – Planning and Community Development</i>			
PP 4 Revised	<b>Organize public meetings and panels/</b>		Discussion of stormwater at public meeting	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 hearing into one of their meetings.
		<i>James Arsenault - DPW</i>			
PP 5 Revised	<b>Town Departments Involved</b>		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
		<i>James Arsenault - DPW</i>			

### 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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
ID 1	<b>Develop a comprehensive Storm Drain Map for the Town</b>		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	<b>Implement a Town Bylaw</b>		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.	Finish development of the IDDE ordinance and overall stormwater regulation for Council and Mayoral approval.
Revised		<i>Christine Stickney – Planning and Community Development</i>			
ID 3	<b>Perform an illicit discharge detection campaign</b>		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 outfalls once a year.
Revised		<i>James Arsenault - DPW</i>			
ID 4	<b>Correct Illicit Discharges</b>	<i>James Arsenault - DPW</i>	Continue	No illicit discharges were confirmed.	Fix illicit discharges confirmed in accordance with plan, and in public view / forums, to promote awareness.
Revised					
ID 5	<b>Educate Citizens</b>	<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					
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### 3a. Additions

					Compile documentation of SSO's over the last 5 years.
				Developed an ordinance to obtain legal authority to prohibit, investigate and remove illicit discharges. Needs to be brought to Mayor and Council for public input and approval.	Ramp up IDDE efforts as follow: <ul style="list-style-type: none"> <li>a. Assess, rank and prioritize stormwater catchment areas.</li> <li>b. Perform stormwater outfall screening and sampling during dry and wet weather conditions.</li> <li>c. Develop and implement a written procedure for identifying suspected illicit discharges.</li> <li>d. Remove illicit discharges and confirm their removal.</li> </ul>



#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
CS 1	<b>Implement by-law related to construction runoff control</b>	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Town has reviewed successful stormwater regulations from other communities in developing our own regulation. With the release of the new permit imminent we were able to incorporate modifications to keep compliant. In the mean time we continued to implement grading/erosion control permits as well as stormwater review as part of general development review.	Get the regulation approved.
Revised					
CS 2	<b>Incorporate sanctions into By-Law to ensure compliance</b>	<i>Christine Stickney – Planning and Community Development</i>	Continue to implement	The Conservation Commission and Planning Board have authority to issue fines for non-compliance under the zoning bylaw and wetland bylaw.	Continue to implement.
Revised					
CS 3	<b>Site Plan Review</b>	<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	<b>Site inspection and enforcement of control measures</b>	<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	<b>Establish procedures to record and address public inquiries or concerns</b>	<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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
PC 1	<b>Evaluate, enhance and implement zoning requirements</b>	<b>Peter Lapolla –Planning/ConCom</b>	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	<b>Develop regulations requiring specific structural storm water controls/</b>	<b>Peter Lapolla –Planning/ConCom</b>	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	<b>Develop review and inspection procedures for private storm water systems</b>	<b>Peter Lapolla –Planning/ConCom</b>	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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
GH 1	<b>Audit of Town Facilities</b>	<i>John McMahon - DPW</i>	Implement audit of Town maintenance activities and operations that have potential to contribute pollutants to stormwater runoff	Discussing with consultant, Brown and Caldwell, assistance in 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	<b>Operation and Maintenance Program</b>	<i>John McMahon - DPW</i>	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	<b>Employee Training Programs</b>	<i>John McMahon - DPW</i>	Continue to implement	Discussed with custodians use of catchbasins near facilities... no dumping wash waters.	Re- present "Storm Watch" Everyday BMP's, employee training package by EXCAL Visual.
Revised		<i>James Arsenault - DPW</i>			
GH 4	<b>Recycling Program</b>	<i>John McMahon - DPW</i>	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 by-laws to require appropriate operation and maintenance of stormwater controls and for Town oversight.	Enact the by-laws.

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

<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 14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
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)	N
Annual program budget/expenditures	(\$)	Not yet tracked

##### 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	X	
▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				
Accompanying Regulation Status (indicate with “X”)				
▪ Illicit Discharge Detection & Elimination	X	X	X	
▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				

## Mapping and Illicit Discharges

Outfall mapping complete	X	(%)	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	X	(%)	80
▪ CADD		(%)	90%*
▪ GIS		(%)	90%*
Outfalls inspected/screened		(# or %)	5%
Illicit discharges identified		(#)	0
Illicit connections removed	X	(# ) (est. gpd)	0
% of population on sewer		(%)	99
% of population on septic systems		(%)	1

## Construction

Number of construction starts (>1-acre) (Landing Apartments / Commercial, Quincy Av)	(#)	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	(#)	770
Storm drain cleaned	(LF or mi.)	~3000 lf
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	~3500 tons
Disposal or use of screenings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)	compost	3000 cy
Cost of screenings disposal	(\$)	\$70,000

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 % CaCl <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	89%  10%(~3700Gal) 0%   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

