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

EPA NPDES Permit Number: **MA041199**

MassDEP Transmittal Number: **W-035827**

Annual Report Number & Reporting Period: **Year 13**
April 1, 2015 – March 31, 2016

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2016)

Part I. General Information

Contact Person: Richard Clarke Title: Director of Public Works

Telephone #: 978-356-6612 Email: rickc@ipswich-ma.gov

Mailing Address: 25 Green Street, Ipswich, MA 01938

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: Robin Crosbie

Printed Name: ROBIN CROSBIE

Title: TOWN MANAGER

Date: 4-28-16

Part II. Self-Assessment

As required, the Town of Ipswich has completed a self-assessment review of the Town's compliance with the permit conditions and has determined that our municipality is in significant compliance. Important achievements are highlighted below:

BMP ID 1-1

a. The Town has continued to fund the preparation of stormwater related educational materials and these materials have been made available at the Town Hall and within other public spaces. The materials include a brochure entitled "Don't Let Your Pet Pollute" which provides educational information regarding the pollution impacts of pet waste. Stormwater related information has periodically been posted on the Town's website, and in the past has maintained a Stormwater Information link within the Conservation Commission's webpage to provide general stormwater quality and BMP information. The Town has investigated the creation of a NPDES MS4 specific webpage to act as a central educational resource for the community and will consider implementing the webpage when the new stormwater permit becomes effective.

BMP ID#3-1

a. The Town's manhole and catchbasin inspection and GPS location program continues to be approximately 95% complete.
b. Town employed a clam shell bucket to clean 1,365 structures during the past permit year.
c. While cleaning each storm drain structure, internal inspections of each structure is also completed to determine their condition and when identified, a program is developed for replacing or modifying those structures that are determined to be in need of improvement.
d. The Ipswich Shellfish Department continued its sampling program throughout the permit year within select sections of the Ipswich River to monitor for elevated levels of bacteria.
e. The Department of Public Works along with the Shellfish Department has continued working with a consultant to conduct specific monitoring of Farley Brook, which is a recognized contributor of pollutants to the Ipswich River. These monitoring activities have been conducted in support of a 319 Grant funded project to implement BMPs within Farley Brook.
f. No specific illicit connections were investigated this past year however the Town continues to investigate high fecal coliform counts in Farley Brook to see if it is linked to an illicit connection.

BMP ID#3-2

a. During late 2014, the Town was awarded a 319 Nonpoint Source Pollution Grant to investigate potential sources of pollutants detected in Farley Brook. Work on the related project has been ongoing through the year and has included extensive sampling within Farley Brook and the contributing stormwater collection system, a screening program by a canine detection service to identify potential pollutant contributing areas, multiple planning meetings of a recently established Farley Brook advisory committee, a public project update presentation to the Ipswich Shellfish Advisory Committee, and the development of a preliminary design for an engineered wetland.

BMP ID#5-2.2

a. During late 2014, the Town was awarded a 319 Nonpoint Source Pollution Grant to investigate potential sources of pollutants detected in Farley Brook. Work on the related project has been ongoing through the year and has included extensive sampling

within Farley Brook and the contributing stormwater collection system, a screening program by a canine detection service to identify potential pollutant contributing areas, multiple planning meetings of a recently established Farley Brook advisory committee, a public project update presentation to the Ipswich Shellfish Advisory Committee, and the development of a preliminary design for an engineered wetland.

b. The Town continued to work with the Metropolitan Area Planning Council (MAPC) to investigate potential BMP implementation sites to improve water quality within select stream subcatchments.

GENERAL

a. Under the direction of the Department of Public Works (DPW) a consulting firm has continued with an inspection program for established BMPs within the Town. Based on observations, the Town has completed maintenance of a number of existing BMPs where needed and is continuing to develop both short term and long-term O&M requirements for each. The DPW budget for FY 2016 includes additional funding for ongoing maintenance of these structures.
b. The DPW continues to actively work to integrate stormwater management improvements into all capital improvement projects and all in-house drainage repair/improvement projects. All sand/salt spreading equipment used for winter sanding and salting operations were again re-calibrated during the fall of 2015. This practice not only reduces the costs associated with sanding operations, but also significantly reduces the sediment loading to the storm drainage system.
c. The Town continued to pursue a Beneficial Use Determination (BUD) through the Massachusetts Department of Environmental Protection (DEP) and over the past year was successful in obtaining approval. The BUD improves the Town's management of generated stormwater residuals (i.e., street sweeping and catchbasin cleaning residuals) by providing improved alternatives for their disposal and reuse.
d. While continuing the pursuit of the above mentioned stormwater residual BUD, the Town again arranged to have excess stockpiled street sweeping and catchbasin residuals properly loaded, transported and disposed at an approved disposal facility.
e. During the permit year, the Town again funded the Public Works Operations Manager position. The Operations Manager will continue as the primary contact for MS4 permit issues.
f. The Planned Activities section of the annual report has been developed as a continuation of the 2003 permit. When the new permit is finalized, the Planned Activities may need to be re-visited.

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 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities–Permit Year 14
1-1	Procurement/Development of education material	DPW Director	Procure or adapt four brochures for distribution and posting in subsequent permit years.	The Town continued to make the brochure entitled "Don't Let Your Pet Pollute" available to the public. The brochure is available in Town Hall and other public spaces. The Town has continued to conduct educational presentations for the Board of Selectmen in support of funding for the new NPDES permit. Town continued to host a link regarding the Town's Stormwater Bylaw and Best Management Practices through the Conservation Commission & Public Works webpage. Updates were provided to the Board of Selectmen regarding the ongoing project to improve the quality of water within Farley Brook The Town has continued work with the Clark Pond Management Committee with the goal of improving the wetland habitat by educating the abutters about Best Management Practices within the watershed.	The Town will continue to fund the preparation of educational materials and will consider addressing specific areas of interest for the Town. Materials may begin to focus on the anticipated format of the new permit. Support for the Clark Pond Committee will continue. This work will serve as a template for outreach to other neighborhood groups looking to improve their local wetland habitat. The Town will continue to host Stormwater related information on its website and will investigate developing a separate "Stormwater Issues" webpage when the next permit becomes effective.
Revised			Will post through existing stormwater webpage with link through Conservation Commission web page.		

				The Town continued several additional educational programs. The Town again published an Annual Recycling Calendar, and the Ipswich Recycling Committee contributed a weekly column to the local newspaper on issues of environmental concern. The DPW also provided news releases to the local news media regarding issues of household waste management, recycling and stormwater.	The Town will continue to provide public information on environmental issues that impact water quality. A public presentation will also be held to inform residents of the ongoing Farley Brook project and the importance of stormwater quality in improving the condition of this important waterway.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 14
2-1	Conduct joint Household Hazardous Waste and Oil/Paint Collection Days	Board of Health with DPW Director	Conduct one joint collection day annually and an additional oil-based paint (plus tires, batteries, fluorescent bulbs) collection day conducted by the DPW alone.	The Town conducted a Household Hazardous Waste and Special Collection Day during May 2015 and a second Special Collection Day was conducted during September 2015. The DPW also continued an ongoing mercury recovery program throughout the permit year. The Town continued its fluorescent bulb collection program through Wheelabrator Tech, Inc. and tire and battery collection program with North Shore Scrap Steel of Gloucester, MA.	The Town will again hold a Special Collection Day during May 2016, and a second Special Collection Day and Household Hazardous Waste Collection Day will be held during September 2016.
Revised		Board of Health, DPW Director, & Recycling Coordinator			

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 14
3-1	Map outfalls and receiving waters	DPW Director with Utilities Director	Develop system for informing all public departments of changes in MS4 resulting from new development or redevelopment; field verify Ipswich Coastal Pollution Control Committee mapping and Parker River Watershed Outfall Mapping	BMP completed in Permit Year 4, see prior report. Limited surface manhole inspections were completed during Year 13. However, through this permit year, the Town continues to estimate that approximately 95% of the comprehensive system has been inspected. Collected data has included structure condition and pipe (inlet & outlet) size and material. Catchbasins were also inspected and sediment depth documented. This information was used to identify catchbasins that required priority cleaning. The DPW continued to recommend that all as-built plans for large development projects provided to the Planning Board and Conservation Commission be submitted to the DPW so that storm drain mapping can be updated in the GIS.	The Town will focus on completing inspections of the storm drain structures and connectivity mapping of the drainage system, using a GPS unit that was purchased by the Town for these purposes during a prior permit year. Completion of these activities will depend on funding availability. The DPW will continue to receive as-built plans for large developments and use the received information to update the GIS.

3-2	Detect and Eliminate Illicit Discharges	DPW Director	Develop Illicit Discharge Detection and Elimination Plan; dry weather discharge evaluation of the top priority area.		
Revised			Conduct sampling in priority areas to investigate potential illicit connections.	Sampling by the Shellfish Department continued in areas of the Ipswich River to verify water quality. The sampling results have periodically revealed elevated levels of bacteria. The Shellfish Department and DPW have continued to assist with ongoing sampling of Farley Brook in support of a 319 Grant to improve water quality within this waterway. The sampling program, along with a canine screening program, have been conducted to attempt to identify sources of pollutants detected in the brook.	Additional priority sub-basins will be identified for an Illicit Detection Project based on the information gathered as part of the 319 Grant project, at the conclusion of the surface manhole inspection program, residential catch basin odor complaints, or through the permitting of all existing drain connections. This is a continuous program expected to be completed over several years. The Town will continue to investigate grant opportunities to fund further water quality investigations and BMP design/construction to improve outfall water quality that may be impacting shellfish beds.
3-3	Conduct Illicit Discharge Educational Program	DPW Director	Included in Minimum Control Measures 1, 2 and 6.	Mailings were sent out to every property owner during permit year 10 alerting them that any connection to the MS4 needs a Connection and Discharge Permit as specified in the recently passed Stormwater Regulation.	The Town will continue to develop educational materials as appropriate in accordance with BMP 1.
3-4	Develop Bylaw Prohibiting Illegal Dumping of Non-SW into MS4	DPW Director	Develop Bylaw	A Stormwater Management Bylaw was passed at Fall Town Meeting on October 20, 2008. This bylaw prohibits illicit discharges to the MS4.	Completed.
3-5	Develop Regulations and Policies to Enforce Bylaw	DPW Director	Policies and Regulations	Stormwater Regulations for the Issuance of Stormwater Management Permits as well as Stormwater Regulations for the Issuance of Connection and Discharge Permits were adopted in February 2010 and implemented in August 2010	Completed.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 14
4-1 Revised	Revise Site Plan Review Bylaw	Planning Director	Draft amendment to the Site Plan Review section of the Zoning Bylaw for review of projects greater than one acre. Planning Board also intends to draft a bylaw that will address projects of less than one acre.	The Planning Board and the Planning and Development Department continue to work to update the stormwater management requirements of the Site Plan Review Regulations so that they are consistent with those of the Stormwater Bylaw.	Ongoing
4-2	Improve Site Plan Review Process	DPW Director	Draft revised process and tracking tool.	Continued to pursue changing building and site plans to electronic versions only. Continued to engage online permit vendor to improve online permitting process.	Ongoing
4-3	Procedures for Receipt of Public Information	Planning Director	Review existing procedures for consideration of improvements or compliance with Phase II.	Any construction project requiring Site Plan Approval by the Planning Board or the issuance of an Order of Conditions by the Conservation Commission is subject to public hearing, where letters and verbal comments on the project's stormwater management program may be entered into the record (from Permit Year 8).	To be determined
4-4	Develop Site Inspection and Enforcement of Control Measures Program	DPW Director	To be developed by the end of Year 2 and implemented in Years 3-5.	The Stormwater Bylaw, which was adopted by the Town, allows to the extent allowed by State law the Permitting Authority or its designees to enter upon private land for inspections, sampling, etc. The Site Plan Review Regulations allow the Planning Board to require inspections during project construction. Inspections of construction sites and their stormwater control measures are made intermittently by DPW staff and/or the Conservation Agent (from Permit Year 8).	Ongoing.

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 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 14
5-1	Post Construction Runoff Bylaw	Planning Director	Complete Draft Bylaw by end of Permit Year 2. Develop associated regulation and guidance in Permit Year 3.	Stormwater Management Bylaw passed in Permit Year 6. Stormwater Regulations for the Issuance of Stormwater Management Permits and the Issuance of Connection and Discharge Permits were adopted in February 2010 and implemented in August 2010.	The Town will continue to work to improve the effectiveness of these regulations and modify them as needed.
5-2	Ensure Adequate Long-Term Operation and Maintenance of BMPs	DPW Director	(See Below)	(See Below)	(See Below)
5-2.1	DPW Review of Structural Best Management Practices	DPW Director	Draft procedure for evaluation of Best Management Practices from Operation and Maintenance perspective	The Town issued two Stormwater Management Permits for projects during the permit period.	The DPW will continue to review all BMPs within Stormwater Management Permit Applications in accordance with the Stormwater Bylaw and Regulations. The DPW will also continue to work through the Stormwater Regulations with the Stormwater Advisory Committee. DPW will continue to receive copies of Planning Board and Conservation Commission filings and review and comment on proposed stormwater management and O&M Plans.

5-2.2	Establish Funding Mechanism for Operation & Maintenance of Structural Best Management Practices	DPW Director	Investigation of potential funding mechanisms.	The Stormwater Advisory Committee continued to include a member of the Finance Committee to have better communication regarding stormwater finance issues. O&M plans submitted for projects seeking a Stormwater Management or Connection and Discharge permit include an estimated O&M budget and name the party responsible for O&M. The DPW budget continued to include O&M funding for large structural BMPs within the Town. The Town continued to consider establishing a Stormwater Utility which would allow the collection of MS4 user fees which could be used to fund O&M of municipally owned stormwater BMPs. The DPW worked with a consultant to prepare an overview of possible stormwater utility for the Town to consider	The Town will continue to investigate the establishment of a Stormwater Utility which would allow for the collection of MS4 user fees that could be used to fund O&M of municipally owned stormwater BMPs. Further consideration will be given when the new permit becomes effective. Town to continue to investigate grant funding opportunities to assist with BMP O&M. Contracted consultant will continue to evaluate the O&M requirements of all large structural BMPs in town. Funding may be considered after completing the evaluation.

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 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities-Permit Year 14
Educate Municipal Employees	Educate Municipal Employees	DPW Director	Annual Stormwater Training Sessions	The DPW Director attended seminars at the national convention of the American Public Works Association regarding MS4 O&M issues and compliance. On behalf of the Town, a consultant continued to monitor the progress of the proposed new MS4 permit. Summary materials were again prepared for the DPW Director who provided an update to the Town Manager.	DPW Director and Operations Manager will continue to pursue opportunities to attend local MA Stormwater seminars; including financing options for Phase II general permit implementation and updates on the proposed new Phase II permit.
6-2	Develop and Implement Municipal Operations Stormwater Plan	DPW Director	Develop and Adopt the plan by the end of Permit Year 2.	Limited mapping of the drainage infrastructure was completed during this permit term. However, approximately 95% of the system has been mapped and inspected through the term. See BMP ID#3-1 for more details.	The Town intends to finalize the GIS drainage layer via Surface Manhole Inspections of the remaining 5% of the drainage network. Once GIS mapping is complete, the Town will further evaluate maintenance priorities and develop a plan.

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 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities
	Not Applicable – No TMDL's have been approved for any Waters within the Town of Ipswich				The Town will work with regulators and watershed stakeholders to develop appropriate goals for the next five year permit term regarding the impaired waters in Ipswich.
Revised	Per the Final Year 2008 Integrated List of Waters, the Ipswich River and several other water bodies within the Town require a TMDL.				

Part IV. Summary of Information Collected and Analyzed

Summarize the results of information or data, if any, that were collected and analyzed during Permit Year 12, but were not included elsewhere in the annual report or requires further elaboration. Information or data could include results/trends from any storm or receiving water quality monitoring, assessment of particular BMP performance, or financial impact of program implementation.

Not Applicable

Part V. Program Outputs & Accomplishments (OPTIONAL)
(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2015 through March 31, 2016)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	n
Annual program budget/expenditures **	($)	
Total program expenditures since beginning of permit coverage	($)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		

Education, Involvement, and Training

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

Legal/Regulatory

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	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					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	115
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	95
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	95
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	
Illicit connections removed **	(#); and (est. gpd)	
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	
% of population on sewer	(%)	
% of population on septic systems	(%)	

Construction

	(Preferred Units)	Response
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 (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	
Low-impact development (LID) practices permitted and encouraged	(y/n)	

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)	
Qty of structures cleaned **	(#)	1,365
Qty. of storm drain cleaned **	(%, LF or mi.)	500 LF
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	($)	25,000 (est.)
• Hourly or per basin contract rate **	($/hr or $ per basin)	$20/basin
• Disposal cost**	($)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1
• Vacuum truck(s) owned/leased	(#)	
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vactor **	(%)	0

	(Preferred Units)	Response
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)	12
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	($)	10,000
• Hourly or lane mile contract rate **	($/hr. or ln mi.)	
• Disposal cost**	($)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	90
• % Roads swept with vacuum sweepers **	%	

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized **	(y/n or %)	
Manual control spreaders used **	(y/n or %)	
Zero-velocity spreaders used **	(y/n or %)	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	
Storage shed(s) in design or under construction	(y/n or #)	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	