

Municipality/Organization: Town of Kingston, MA

EPA NPDES Permit Number: MAR041041

MaDEP Transmittal Number: W-036193

Annual Report Number  
& Reporting Period: No. 10: March 16-March 17

## NPDES Phase II Small MS4 General Permit Annual Report

### Part I. General Information

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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: Robert H. Fennessy, Jr.

Title: Town Administrator

Date: May 1, 2017

## Part II. Self-Assessment

### Permit Term 2016-2017

During the March 2016 to March 2017 permit term, the Town of Kingston continued to meet the requirements of its NPDES Phase II permit with assistance from Environmental Partners Group, Inc. (EPG), ATP Environmental, and other agencies, and volunteers. EPG has a contract with the Town to submit a Notice of Intent (NOI) and Stormwater Management Plan (SWMP) under the new Stormwater MS4 General Permit that was jointly issued by USEPA Region 1 and MassDEP on April 4, 2016 with an effective date of July 1, 2017. The Town has been working with EPG to plan for submitting the required NOI by September 29, 2017 and SWMP by July 1, 2018. The FY18 budget submission included additional funding requests in order to meet the enhanced requirements of the new MS4 permit. ATP Environmental continues to assist the Town with planning and engineering for all grant-funded stormwater remediation projects in the Jones River Estuary and Kingston Bay, as they have done since 2011. Kingston had some major accomplishments during the 14<sup>th</sup> permit term and the most significant include:

- At Annual Town Meeting in June 2016, the Town of Kingston voted to establish a Jones River Restoration Fund to help support the efforts of the Jones River Watershed Association (JRWA) to improve flow, fish passage, and water quality of the Jones River through removal of the Elm Street Dam, a town-owned dam. The JRWA and the Town will work in partnership through the EEA-funded design and permitting phase and the subsequent dam removal. In early 2017, the Town worked on and submitted a MassDEP 604b grant application to sample stormwater outfalls upstream and downstream of the dam in order to remediate pollution discharging to the river;
- At the end of June 2016, Kingston completed Phase IV of a multi-phase project to mitigate stormwater impacts, improve water quality, and open more shellfish beds in the Kingston Bay. Phase IV was funded by a MA Office of Coastal Zone Management (CZM) Coastal Pollutant Remediation (CPR) grant in the amount of \$125,000.00 and included the successful installation of underground infiltration systems at two sites (Cedar Lane/Page Avenue & Shore Drive) to remediate impacts from stormwater pollutants emanating from the final priority outfalls identified through a 2011 Massachusetts Bays Program (MBP) Research and Planning Grant. Another important deliverable of the CPR'16 grant was a summary report on the status of Kingston Bay shellfish harvest areas; a collaborative effort among the Towns of Duxbury, Kingston, and Plymouth, the MBP, the Massachusetts Division of Marine Fisheries (DMF), and CZM;
- Commenced design, engineering, and permitting of the Gray's Beach Stabilization & Restoration project which includes some stormwater improvements to reduce erosion & eliminate imperviousness. In early 2017, the Town worked on and submitted a Land and Water Conservation Fund grant application for assistance with funding the implementation of this project and will consider applying for other grant opportunities for this project;
- Working with consulting engineers throughout the 14<sup>th</sup> permit term to finalize preliminary engineering plans for the redesign of Winter Street to improve stormwater control and treatment before discharge to a perennial stream and working to develop preliminary engineering designs to improve stormwater outfalls on Atwood Street, Prospect Street, and River Street which all discharge to wetland resource areas including the Jones River;
- Continuing to pursue permanent easements off of Lake Street from the City of Brockton and the Silver Lake Regional School District to install stormwater best management practices and a replacement culvert on Lake Street for the purpose of improving water quality and streamflows for habitat and fish passage as designed through a 2015 MassDEP Sustainable Water Management Initiative (SWMI) grant;
- Distributing the Greenscapes Pet Waste Card through the Town Clerk's office where dog licenses are obtained (<http://www.greenscapes.org/home-owners/pet-waste/>); and
- The Conservation Commission mailed out 50 outreach and education packets to new homeowner's within Commission jurisdiction to provide information about wetlands, stormwater pollution prevention tips, organic land care, and other important topics that contribute to better water quality.

Further accomplishments by the Town of Kingston in the 14<sup>th</sup> year of implementing its Stormwater Management Plan are described in more detail below.

#### Stormwater Working Group

The informal Stormwater Working Group met several times, in whole or in part, in the 2016-2017 permit term for the following:

- In May 2016, Town staff attended the "2016 Small MS4 Stormwater Permit for Massachusetts and Stormwater Collaboratives" Workshop in Hyannis, MA to learn more about the new permit and regionally-funded programs;
- Discussing with EPG the forthcoming expectations under the new MS4 Stormwater Permit;
- Discussing development of Kingston's Stormwater Management Regulations to support the By-Law;
- Securing and administering mitigation grants/projects;
- Evaluating conceptual, preliminary, and final design plans with ATP Environmental, EPG, & Weston & Sampson for stormwater mitigation proposals; and
- Working with the Greenscapes Program to continue public outreach components of measurable goals.

#### Greenscapes Program

In the 14<sup>th</sup> permit term, the Town of Kingston Water Department continued to support the *Greenscapes* Program sponsored by the NSRWA (South Shore regional partner of the Massachusetts Bays Estuaries Program) and financed by Massachusetts Department of Environmental Protection, Massachusetts Environmental Trust and the Environmental Protection Agency. Through the *Greenscapes* Program, the MassBays South Shore Regional Coordinator conducted outreach to the Kingston Intermediate School (KIS) 5<sup>th</sup> grade science classes with their *Water All Around You Program* to provide students with the knowledge and tools to be future stewards of the environment. The 2010 movie, *The Jones*

*River: A Duck's Eye View* ([https://www.youtube.com/watch?v=Al-5q\\_ktq9s](https://www.youtube.com/watch?v=Al-5q_ktq9s)), by Alex Mansfield, JRWA Ecology Program Director, was shown to students to give them a visual tour of the river - dams, water quality issues, and all else - in order to educate the students and promote restoration of the river. Various *Greenscapes* informational brochures were distributed to the public in the Town Hall. The Kingston Conservation office regularly mails out the *Greenscapes* brochures to new residents who purchase property within the Commission jurisdiction and 50 new residents received the brochures in 2016-2017.

#### *Website Announcements*

In the 2016-2017 permit term Town departments continued to be very active in using the Town of Kingston website (<http://www.kingstonmass.org>) to post community announcements for a variety of things including pollution prevention tips, the availability of free compost at the transfer station, the sale of subsidized compost bins at the Department of Streets, Trees, & Parks (DSTPs), educational messages regarding stormwater, recycling, environmentally sensitive landscaping, etc. A stormwater webpage for posting more stormwater-related materials, including the Town's NPDES Phase II work and stormwater remediation work continues to be updated on a regular basis ([http://kingstonma.govoffice3.com/index.asp?SEC=98244A4B-6C67-49DB-8F75-2428CB6987B9&Type=B\\_BASIC](http://kingstonma.govoffice3.com/index.asp?SEC=98244A4B-6C67-49DB-8F75-2428CB6987B9&Type=B_BASIC)).

#### *Household Hazardous Waste Day*

Residents from the Town of Kingston and Duxbury participated in a Duxbury-sponsored Household Hazardous Waste Day in 2016 through a reciprocal arrangement that allows other member towns of the South Shore Recycling Cooperative (SSRC) to attend. Another is planned in Kingston for SSRC member towns on May 13, 2017 ([http://ssrcoop.info/images/documents/hhw\\_flyer\\_3-17\\_spring.pdf](http://ssrcoop.info/images/documents/hhw_flyer_3-17_spring.pdf)). This is a service the DSTP's provides to residents on an annual, rotating basis in partnership with the Town of Duxbury in order to promote the proper disposal of household hazardous waste.

#### *MS4 Operation & Maintenance*

The Department of Streets, Trees & Parks (DSTP's) commenced their spring 2016 catchbasin, drainline, & water quality structure cleaning with the vactor truck purchased in 2009 and in the 14<sup>th</sup> permit year cleaned approximately 80 structures, 350 linear feet of drainlines and will dispose of approximately 150 tons of material in the new fiscal year/current permit term). The DSTP's calibrates their salt spreaders every year to ensure application is appropriately regulated. As part of the enhanced program to clean the town-wide stormwater system, the staff of the DSTP's has generated much valuable data on structure condition for future operation and maintenance needs, as well as for ensuring the Town meets its good housekeeping goals.

#### *Collaborating with Neighbors for Water Quality Improvement Projects*

In the 14<sup>th</sup> permit term, the Town of Duxbury, the JRWA, and the South Shore Region of the Mass Bays Program supported the Town of Kingston's 2016 Coastal Pollutant Remediation (CPR) grant application to mitigate a priority stormwater outfall to Kingston Bay. The Town also worked with the JRWA to install stormwater BMPs at the JRWA Landing Road site through which a town-owned outfall traverses; a high priority outfall for mitigation due to high sediment loading to the Jones River. The Town of Kingston is committed to continuing collaborations with our neighboring communities and nonprofit friends to enhance our shared coastal resource waters.

#### *Jones River Watershed Association (JRWA) & Jones River Landing (JRL) Ecology & Education Programs*

Throughout 2016, JRWA/JRL held many educational events that reached nearly many adults and children, including students from area schools and Scout troops. The ecology programs and other activities of the JRWA directly benefit the residents of the town and greatly enhances the efforts of the Town of Kingston in getting the message of environmental stewardship of our wetlands, rivers, and bay out to the general public (See JRWA website at <http://www.jonesriver.org> & 2016 Annual Report at <http://jonesriver.org/getfile/annual-reports/JRWAProgressReport2016.pdf> for more information). JRWA held its 11<sup>th</sup> annual herring count in 2016 and had its 6<sup>th</sup> largest herring run since the count started in 2005 with 3,325 fish counted; down from 4,437 the prior year.

#### *Water Quality Monitoring*

With four years of CPR-funded stormwater mitigation projects completed and the priority outfalls identified through the 2011 Mass Bays Research & Planning grant mitigated, the Town will now focus on priority outfalls identified through the 2012 DEP 604(b) Water Quality Management Planning grant under which stormwater sampling occurred at 10 different outfalls; 6 town-owned and 4 state-owned outfalls. The Town will develop a comprehensive water quality monitoring plan for all stormwater outfalls as part of the new SWMP to be developed under the new permit. The Kingston Board of Health conducted weekly sampling of water quality at swimming beaches during the permit term and the MA Division of Marine Fisheries (MassDMF) continued to conduct sanitary surveys for the shellfish growing areas in the bay. This bacterial monitoring helps to inform the Town of Kingston as to potential stormwater pollutants and target areas of concern. In addition, the JRWA conducted water quality sampling throughout Summer 2016 in Kingston Bay and at their Landing Road site on the Jones River as part of the Provincetown Center for Coastal Studies (PCCS) bay-wide monitoring. The parameters sampled during the 13 sampling events included salinity, temperature, nitrate+nitrite, ammonium, total nitrogen, orthophosphate, total phosphorus, turbidity, chlorophyll, and phaeophytin with results found here: <http://www.capecodbay-monitor.org>. JRWA will conduct the same sampling program in the 14<sup>th</sup> permit term.

#### **Planned Activities 2017-2018**

Planned activities for the 2017-2018 permit term include:

1. Work with EPG to prepare NOI & SWMP to comply with the new General Permit;
2. Finalize and implement Stormwater Management Regulations to support administration of Kingston's Stormwater Management By-Law;
3. Continue work to prioritize targets for pollutant remediation, work to implement BMPs, and administer grant projects while seeking further grant opportunities;
4. Work with consulting engineers to finalize engineering plans and complete permitting of Winter Street stormwater mitigation and develop engineering plans to mitigate outfalls on Atwood, Prospect, and River Streets;
5. Complete construction of additional salt storage shed in Spring 2017;
6. Improve stormwater webpage on Town of Kingston website in conjunction with the Stormwater Management By-Law and Regulations, overall NPDES program, stormwater sampling grants, and remediation projects;
7. Develop maintenance record database for enhanced management of the MS4 and for use in GIS;
8. Regularly update the online mapping website to increase awareness of the Town's MS4, among other things;
9. Work with the Planning Dept. on enhancing the Town's GIS for the benefit of MS4 management, among other things;
10. Continue to improve annual DSTP activities including researching salt use reduction strategies;
11. Work with DEP Division of Watershed Management to source track bacterial hotspot in Tussock Brook within the Lower Jones;
12. Continue to expand use of LID in Kingston and on town-owned properties/projects;
13. Continue Water Department support of the Greenscapes Program, working with Greenscapes on public education efforts;
14. Conduct workshops for single family homeowners such as Stormwater Management for the Home, Healthy Lawns & Landscapes, Landscaping in the Coastal Zone, etc. to educate residents about various ways to reduce stormwater pollution to wetlands & waterways;
15. Continue mailing stormwater brochures and conducting stormdrain stenciling to complete goals under existing General Permit;
16. Provide MassDOT water quality data for sampled outfalls from Route 3A and Route 3 so that they may begin to prioritize Kingston outfalls for mitigation in their Impaired Waters Program;
17. Continue collaboration with JRWA on grant applications for stormwater/resource area improvements, protection of open space, community clean-up days, educational programs, restoration projects, dam removals, etc.;
18. Continue partnership with KIS, SLRHS Conservation & Horticulture, as well as other community groups (Boy Scouts, Girl Scouts, etc.) for Town of Kingston stormwater and resource area improvement projects;
19. Continue partnerships with other agencies and non-profits; and
20. Continue partnerships with neighboring towns on grant proposals to improve water quality of the bay.

### 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
# 1.1	Partnership with local watershed association	Conservation, DSTP's, Planning, BOS, Water Dept., Harbormaster, etc.	Collaborate on storm water management, water quality monitoring, herring count, educational programs, clean-ups, etc.	Supported JRWA grant applications for public education and outreach (dam removal & climate change) (NOAA)  <i>Water All Around You Program</i> at Kingston Intermediate School (JRWA, MBP, NSRWA, Greenscapes)  Herring count at Water Dept. (JRWA & public)  River & CoastSweep clean-up (JRWA, other partners & public)	Continue cooperative efforts with JRWA outreach and education and grants in 2017 (NOAA)  Continue collaboration on this successful program  Herring count in spring 2017 organized with Water Dept. and community (JRWA)  Do collaborative clean – ups in 2017 (Coastsweep, etc.)
Revised					

# 1.2	Storm drain stenciling	DSTP, Conservation, KIS, Stormwater Working Group	Re-start and finish town-wide stenciling with educational doorhangers & newspaper articles	No stormdrain stenciling in 2016, but installed several "Dump No Waste, Drains to Bay" catchbasin & drain manhole grates/covers (CPR)	Continue work to expand stenciling effort to increase stormwater education efforts. DSTP's to assist on major roads.
Revised					May re-evaluate technique/methods – explore use of metal markers/etched grates/covers  Write more newspaper articles on project, use website
# 1.3	Distribution of educational materials and offer of free workshops for residents/officials through Greenscapes Program	Kingston Water Dept., ConCom	Display and use these materials at Kingston Town Hall to encourage greenscapes in Kingston  Install a Greenscape on town property  Use town website for educational stormwater messages	Greenscapes Program (MBP, NSRWA, & other sponsors)  ConCom continued mailings to new residents living near wetlands and waterways  Created stormwater webpage in 2015 to increase public education – continued to update	Continue support of Greenscapes Program  Continue mailings  Continue to improve contents of stormwater webpage
Revised				Regular articles & public access shows on river and watershed (JRWA, PACTV, Kingston Reporter)	Use media more to educate public about stormwater
# 1.4	Pet waste station installation at local conservation lands	Conservation, E.B. Sampson Fund (town grant program)		Maintained Pet Waste Stations installed on 5 conservation land parcels (Senior volunteer)	Install new pet waste station at Delano Beach and other public places  Mail <i>Scoop It</i> brochure to licensed dog owners
Revised					
# 1.5	Educational seminars for employees, residents, local engineers, developers, real estate agents on water quality, stormwater, conservation issues	Stormwater Working Group	Plan contents of workshops and set dates with schedule of seminars in tax bills, in paper, on website	Composting workshop held in 2016 at Senior Center (South Shore Locavores)  Draft Stormwater Management Regulations	Hold more workshops  Implement supporting Stormwater Management Regulations
Revised					
# 1.6	Annual clean-up of town properties/streets	Conservation, DSTP	Hold annual clean-up days	Various Boy/Girl Scout groups and volunteers cleaned up conservation land parcels & DSTP's disposed of rubbish (Boy/Girl Scouts & public)	Participate in Fall Coastsweep and expand beyond the coast to inland areas (ConCom, DSTP's, Recreation, community groups, volunteers, etc.)

Revised				DSTP's conduct monthly cleanups along roadways	Continue regular cleanups
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## 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
# 2.1	Partnership with local schools	ConCom, DSTP's  Water Dept.	KIS Raingarden Maintenance  Greescapes Program participation	ConCom & DSTP's did not maintain raingardens in 2016  <i>Water All Around You</i> program for KIS 5 <sup>th</sup> graders (MBP, NSRWA, & JRWA)	Conduct maintenance in 2017 with volunteer & school (volunteers/KIS)  <i>Water All Around You</i> program for KIS 5 <sup>th</sup> graders (MBP, NSRWA, & JRWA)
Revised					
# 2.2	Partnership with watershed association	Planning, DSTPs, Harbormaster, Conservation  DSTPs, Conservation, Planning, Water, Health, Building  Conservation, DSTPs, BOS  Water Dept.	Continue collection of water quality data (JRWA)  Stormwater Working Group  Continued mitigating priority outfalls (ATP)  Hold annual Herring counts & Greenscapes support	JRWA water quality monitoring in river & bay (JRWA & PCCS)  Under contract with EPG for new NOI & SWMP (JRWA)  Completed Phase IV & started Phase V (ATP & JRWA)  Trained volunteers to participate in 2016 herring count (JRWA)	Continue water quality sampling and engage public in sampling (JRWA)  Submit new NOI & SWMP, draft SW regulations, consider targeted mailings. (JRWA)  Commence Phase V (ATP & JRWA)  Continue herring count & work with Greenscapes in new permit term (JRWA)
Revised					
# 2.3	Storm drain stenciling	Highway, Conservation, KIS, Stormwater Working Group	Organizing neighborhoods/volunteers to stencil storm drains	No stenciling in 2016, but purchased CB/DMH grates & covers with "No Dumping, Drains to Bay" messages	Continue purchase of etched grates & covers and seek volunteers for stenciling in 2017
Revised					
# 2.4	Establishing formal Stormwater Management Task Force with citizen involvement	Selectmen and all other applicable boards	Establish Storm Water Management Task Force with regularly scheduled meetings and activities	Still informal Stormwater Working Group meetings with appropriate town officials (JRWA & other agencies)	Establish formal Stormwater Management Task Force with expanded involvement to include more town boards and citizens at large (EPG, JRWA, other towns input)
Revised					

# 2.5	Household Hazardous Waste Collection and Recycling Day	DSTP's and Town of Duxbury	Hold annual collection days  Collect mercury-containing thermometer/thermostats throughout year	Successful collection day in Duxbury held in spring 2016 that was well attended by Kingston residents (SSRC)  DSTP's cont'd collecting mercury thermometers, thermostats and handing out non-mercury thermometers	Spring 2017 collection day in Kingston for Duxbury as well (SSRC)  Town to continue program
# 2.6	Educational seminars, mailings, & other information for residents, local engineers, developers, real estate agents on water quality, stormwater, conservation issues	Stormwater Working Group	Plan contents of workshops and set dates. Advertise seminars in tax bills, in paper, & website.  Expand educational outreach via website, mailings, etc.	Regulatory revision workshop (including stormwater provisions) open to public in Kingston by DEP in 14th permit term (DEP)  Advocated for stormwater pollution prevention with various town departments & public through public hearings & conservation related mailings to new residents  Created stormwater webpage on town website	Hold more workshops for general public  Work on improving webpage
# 2.7	Annual clean-up days on town properties	Conservation, DSTP	Hold annual clean-up day	Various Boy/Girl Scout groups cleaned up conservation land parcels and DSTP's disposed of rubbish (Boy/Girl Scouts & public)	Work on coordinating more large scale clean-up days on town lands with various town groups such as Coastsweep and beyond in 2017 (JRWA & Public)
# 2.8	Form "Friends of Conservation Land" group	Conservation, Open Space Committee & DSTP's	Hold regular clean-up days and watch group to reduce vandalism, theft and littering of town conservation land where there are many wetlands and streams	Senior volunteer for conservation land maintenance & began planning Volunteer Land Stewardship Program (Americorps-MassLift, Wildlands Trust, & public)	Continue outreach efforts to fully implement the Volunteer Land Stewardship Program (Americorps-MassLift, Wildlands Trust, & public)

### 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
# 3.1	Catch basin/outfall and sewer mapping to receiving waters	Planning, DSTP, Conservation	Mapping hotspots that are suspected to carry high pollutant loads	Under contract with EPG to submit NOI & SWMP (EPG)	Submit new NOI and SWMP (2017) & implement SW regulations to aid implementation of amended by-law (EPG)
Revised					
# 3.2	Sewering of densely developed areas and environmentally sensitive areas of town to reduce septic influence on water quality	Sewer Commission	Expand sewer capacity	Continued planning for sewer expansion	Continue planning for sewer expansion
Revised					
# 3.3	Regulatory Review & Permit Enforcement	Selectmen, Planning, Building, Zoning, Conservation, DSTP's, BOH		Draft Stormwater Management Regulations	Implement Stormwater Management Regulations
Revised					
# 3.4	Storm drain stenciling	DSTP, Conservation, Stormwater Working Group	Adopt a Storm Drain	Discussion of including this in storm drain stenciling efforts, but no progress made	Neighborhood representatives to monitor storm drains for illicit discharges – pursue this with stormdrain stenciling efforts
Revised					
# 3.5	Water Quality Monitoring	Planning, Conservation, Highway, Water, Harbormaster, Stormwater Working Group	Expand WQ monitoring to include surveying for illicit discharge detection	BOH Beach sampling and DMF Sanitary Surveys only in 14 <sup>th</sup> year  Based on WQ analysis, prioritized new outfalls for remediation	Complete conceptual, preliminary, and final plans to implement BMPs at priority outfalls (ATP & CPR)

### 4. Construction Site Stormwater Runoff Control



<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>
# 4.1	Regulatory Mechanisms	Selectmen, Planning, Building, Conservation, DSTP, Stormwater Working Group	Establish and implement local stormwater management by-laws and/or stormwater authority to increase construction runoff controls in design criteria	Draft Stormwater Management Regulations	Finalize Stormwater Management Regulations and complete implementation (EPG, JRWA, public)  Continue implementing & encouraging LID through regulatory permitting
Revised					
# 4.2	Site Plan Review	Planning, Conservation, Building, Zoning, BOH, Stormwater Working Group	Establish Phase II specific stormwater guidelines for review of site plans	Regularly require developers to obtain NPDES CGP for disturbance of 1 acre or more of land	Review in accordance with Stormwater Management By-Law & Regulations
Revised					
# 4.3	Enforcement	Building, Planning, Zoning, BOH, DSTP, Conservation, Stormwater Working Group	Establish new site inspection forms, new procedures and fee/fine schedules for incorporating requirements of Phase II  TMDLs on 303d waters	Draft Stormwater Management Regulations further defining enforcement procedures	Implement Stormwater Management Regulations to further enhance enforcement procedures  Work with Plymouth, Duxbury, MEP & DEP to develop TMDL for bay and develop land use management standards to work toward removing waterbodies from 303d list
Revised					

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

<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>
# 5.1	Regulatory Mechanisms	Selectmen, Town Administrator, Planning, Building, Conservation, DSTP	Implement local stormwater management by-law	Draft Stormwater Management Regulations further defining enforcement procedures	Implement Stormwater Management Regulations to improve enforcement procedures
Revised					
# 5.2	Site Plan Review/As-Built Review	Planning, Conservation, Building, Zoning, BOH, DSTP	Establish Phase II - specific stormwater guidelines and low impact development guidelines for review of site plans	Draft Stormwater Management Regulations finalize jurisdictional review  GIS mapping will improve reviews	Implement Stormwater Management Regulations to improve reviews  Continue work on town-wide GIS enhancements
Revised					
# 5.3	Enforcement	Building, Planning, Zoning, BOH, DSTP, Conservation	Establish new site inspection forms, new procedures and fee/fine schedules for incorporating requirements of Phase II	Draft Stormwater Management Regulations further defining enforcement procedures  Continue to attach Operations & Maintenance Plans to Conservation Orders of Conditions and refer directly to the O & M Plan with specific conditions into perpetuity (as required under DEP stormwater policy)  Continue requiring annual reports submitted to ConCom for stormwater maintenance post-construction	Implement Stormwater Management Regulations to further enhance enforcement procedures  Establish cash (instead of bond) surety with developers to create binding obligation to keep stormwater runoff onsite  Follow up on post-construction enforcement

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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 15</b>
# 6.1	Employee Training	Selectmen, DSTP, Water, Building, Planning, Conservation, Stormwater Working Group	Establish pollution prevention plan and good housekeeping procedures & schedules	Attended workshop on Creating Healthy, Resilient Communities Through Green Infrastructure in January 2017	Plan to go to UNH Stormwater Center in 2017 with Supt. of Streets, Trees & Parks & seek other training opportunities
Revised					
# 6.2	Improved Maintenance	DSTP, Water, Building	Increase frequency of maintenance and implement better storage practices	Vacuum truck cleaned ~80 structures in 2016-2017 & disposed of ~150 tons (including street sweepings)  Annual street sweeping reduced through elimination of sand from de-icing practices	Work on database to track maintenance activities  Work on salt reduction strategies as well
Revised				Calibrate spreaders to reduce salt use	Continue to calibrate spreaders
# 6.3	Improved stormwater treatment	DSTP, Water, Conservation, Planning	Upgrade current systems in sensitive areas	Completed SW retrofits at 2 sites with grant funds in 2016 (CZM, ATP)	SW retrofits at 1-2 sites to be implemented in 2016 (CZM, ATP, HW)  Continue to seek funding for retrofitting town-owned sites to improve stormwater treatment (ATP)
Revised					
#6.4	Inter-department education	Conservation, Building, Water, DSTP, Sewer, Zoning	Continue informal education	Continued communicating the importance of stormdrain protection during road work for water, sewer, & drainline work performed by the town and the use of enhanced erosion controls	Continue to be vigilant with informal inter-departmental education of stormwater impacts to waterways  Seek formal training sessions for all dept's.
#6.5	Improved Recycling	BOS, DSTP's, Recycling Committee	Continue improvements	DSTP's continues to sell compost bins which will help in eliminating food waste from waste stream - raffled off 2 compost bins and did public outreach in 4/2016 at Green Energy Fair  Commenced rigid plastic and antifreeze recycling at transfer station  BOH required private haulers to recycle in Kingston 11/16	Continue to encourage composting to eliminate food waste from the waste stream  Continue to improve recycling  Regulations in effect 4/17

#6.6	Stormdrain Stenciling	Stormwater Working Group, DSTP's	Start and finish town-wide stenciling with educational doorhangers & newspaper articles	No stormdrain stenciling in 14 <sup>th</sup> permit term, but installed several "Dump No Waste, Drains to Bay" catchbasin & drain manhole grates/covers (CPR)	Work with community groups to continue stenciling project in 2017
					Write newspaper articles, use website, other media outlets

**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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
#7.1	Target 303d waterbodies for Water Quality Monitoring	Stormwater Working Group	Focus sampling on 303d impaired waterbodies to work toward removing them from 303d list	Implemented SW retrofit systems at 1 town-owned outfall (2 sites) discharging to bay in 2016 (CZM, ATP)	Conduct monitoring in 2017 at headwater to Jones, etc.  Seek grant funds to implement BMP retrofits at prioritized sites identified through 604(b) sampling (ATP & others)
Revised					

#7.2	GIS Mapping	Stormwater Working Group	Complete mapping of stormdrain system and outfalls	Continued annual updates to OnlineGIS (CAI)  No GIS training in 2016	Continue to upgrade OnlineGIS with updated & improved datalayers  Continue to seek GIS training in 14 <sup>th</sup> permit term
Revised					

#7.3	Stormwater Modeling	Stormwater Working Group	Focus modeling on 303d impaired waterbodies to work toward removing them from 303d list as well as bay needing TMDL	2016 - Completed mitigation of outfalls prioritized through the MassBays Research & Planning grant work in 303d bay & Jones River	Begin addressing priorities identified through 604b project in lower Jones
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**Part IV. Summary of Information Collected and Analyzed**

The following assessments were conducted in the year 2016-2017:

1. Based on priorities identified through the DEP-funded 604(b) Water Quality Management Planning project, ATP Environmental has been working on developing conceptual, preliminary, and final engineering plans for future BMP permitting & implementation;
2. Board of Health beach sampling summer swim season 2016-2017 with no closures;
3. DMF/Harbormaster 2016-2017 sanitary survey sampling of Kingston Bay; and
4. JRWA water quality monitoring of river and bay in during Summer 2016 for PCCS Cape Cod Bay sampling.

**Part V. Program Outputs & Accomplishments (OPTIONAL) \* (Please see note below this section)**

**Programmatic**

Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures	(\$)	ATM2011 – \$ 23,350.00 for NOI & SWMP. Remaining budget for education & outreach = \$ 1,565.00 Submitted request for \$70K for FY18

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	-Many (website) -50 (Conservation mailings) -All (Mass Recycles/ Greenscapes) -Many more (JRWA Programs)
Stormwater management committee established	(y/n)	Y - Informal
Stream teams established or supported	(# or y/n)	JRWA
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	2 miles
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	12 (in SSRC – 1 in Kingston/Dux)
▪ community participation	(#)	?(in SSRC)
▪ material collected	(tons or gal)	Electronic Waste – ? tons Textiles - ? tons (SSRC)
School curricula implemented	(y/n)	Y ( <i>Water All Around You &amp; School Recycling Programs</i> )

**Legal/Regulatory**

In Place  
Prior to      Under  
Phase II      Review      Drafted

Regulatory Mechanism Status (indicate with "X")				
▪ Illicit Discharge Detection & Elimination	Amended 2014	x		
▪ Erosion & Sediment Control		x		

▪ Post-Development Stormwater Management	Amended 2014	x		
Accompanying Regulation Status (indicate with "X")				
▪ Illicit Discharge Detection & Elimination	Amended 2014	x		
▪ Erosion & Sediment Control		x		
▪ Post-Development Stormwater Management	Amended 2014	x		

### Mapping and Illicit Discharges

Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	253
System-Wide mapping complete	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	100%
▪ CADD	(%)	0
▪ GIS	(%)	100%
Outfalls inspected/screened	(# or %)	4%
Illicit discharges identified	(#)	0
Illicit connections removed	(#) (est. gpd)	0
% of population on sewer	(%)	26.0%
% of population on septic systems	(%)	74.0%

### Construction

Number of construction starts (>1-acre)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	95%
Site inspections completed	(# or %)	40
Tickets/Stop work orders issued	(# or %)	1
Fines collected	(# and \$)	1 (\$3K)
Complaints/concerns received from public	(#)	5

### Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	95%
Site inspections completed	(# or %)	30
Estimated volume of stormwater recharged	(gpy)	85%

### Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	Once/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Once/year
Total number of structures cleaned	(#)	~80
Storm drain cleaned	(LF or mi.)	~350 LF
Qty. of screenings/debris removed from storm sewer <i>infrastructure (includes street sweepings)</i>	(lbs. or tons)	~150 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		None (FY18)

Cost of screenings disposal ( <i>includes street sweepings</i> )	(\$)	0

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	1/year
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	1/year
Qty. of sand/debris collected by sweeping ( <i>includes storm sewer screenings</i> )	(lbs. or tons)	~150 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	None (FY18)
Cost of sweepings disposal ( <i>includes storm sewer screenings</i> )	(\$)	0 (FY18 disposal)
Vacuum street sweepers purchased/leased	(#)	No
Vacuum street sweepers specified in contracts	(y/n)	N, but will be for porous pavements

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	20%
▪ Herbicides	(lbs. or %)	20%
▪ Pesticides	(lbs. or %)	20%

Anti-/De-Icing products and ratios (100% NaCl or CaCl <sub>2</sub> , depending on temperature)	% NaCl	100%
	% CaCl <sub>2</sub>	100%
	% MgCl <sub>2</sub>	0
	% CMA	0
	% Kac	0
	% KCl	0
	% Sand	0
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	Y(1 town truck)
Estimated net reduction in typical year salt application	(lbs. or %)	0%(researching)
Salt pile(s) covered in storage shed(s)	(y/n)	Y (replaced FY17)
Storage shed(s) in design or under construction	(y/n)	N