

Municipality/Organization: Town of Watertown EPA

NPDES Permit Number: MAR041083 MaDEP

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**Annual Report Number
& Reporting Period:** No. 13: April 2015-March 2016

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Gerald S. Mee, Jr. Title: Superintendent of Public Works

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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: Michael J. Driscoll

Title: Town Manager

Date: 4/30/16

Part II. Self-Assessment

During Permit Year 13, the Town continued implementing the six minimum control measures necessary to comply with the permit and has determined that it is in substantial compliance with all requirements. Key aspects of this year's program are outlined below:

Measure 1: Public Education and Outreach

During Permit Year 13, DPW and SAC have focused education and outreach efforts around several stormwater issues in Watertown. The first message, which is the most basic, is that the stormwater that enters catch basins and drains ends up in the river, rather than being treated at the Deer Island wastewater treatment plant. Even though the storm drain and sanitary sewer systems are separate, they do communicate with each other. Sewers slowly leaking into the storm drain system cause elevated bacteria levels in the river, leading to swimming and boat closures. Therefore, education about the Town's IDDE program is also a priority. Issues related to excessive nutrients in the Charles River, in part due to stormwater runoff, has been another issue that the Town is prioritizing. To reduce nutrient loading to the river, a number of approaches must be taken. One is educating the public about behaviors that increase nutrient loading, such as certain lawn care practices or blowing leaves into the streets. The other is increasing awareness of the issue among policy makers and developers in Town.

To continue these efforts, the Town developed and printed a new flyer, entitled *Watertown Rain Drain Pain* during Permit Year 13. This flyer speaks to the first message, that stormwater ends in the river and therefore personal behavior has a direct impact on stormwater pollution. The flyer is available at DPW and on its web-site, and also is provided at various events.

Another major effort of the Town was further developing the educational material available on its web site, www.watertowndpw.org. During the permit year, a separate page titled *Stormwater Management* was added and additional information was posted on the Town's existing *Illicit Discharge Detection Program* page. For contractors, a separate page titled *DPW Permits* was added.

Key features on the *Stormwater Management* page include:

- General statistics about the Town's drainage system, including number of catch basins and miles of pipe.
- A copy of the Year 12 NPDES Phase II annual report. Reports will be added on an annual basis.
- Slides from previous presentations about stormwater.
- Information about stormwater programs for residents, such as catch basin stenciling, pavement border removals, and tree plantings.
- Additional information about the Town's rain barrel program.
- Information about how to reduce stormwater pollution.

Key features on the *Illicit Discharge Detection Program* page include:

- Information on what an illicit discharge is and from where they come.
- How to report an illicit discharge.
- Copies of quarterly reports submitted to the EPA as part of the Town's IDDE program, from 2013 onwards. Reports are added on a

quarterly basis.

- Slides from presentations about IDDE.

Key features of the *DPW Permits* page include:

- Copy of site plan checklist, which includes stormwater management and erosion control requirements.
- Copy of drainage requirements.
- Brochure entitled *Erosion Control for Residential Construction*, prepared by the EPA.
- Requirements for parking lot drainage retrofits.

During the permit year, the DPW and SAC reevaluated the ability and effectiveness of providing an environmental speaker series. The original measurable goal was to provide three to five speakers or movies on environmental topics. Although the Town is committed to providing a robust public education and outreach program, it was felt that the goal of holding a speaker series was not an efficient method of achieving this goal. Based on discussions with other communities, these types of meetings take considerable planning and coordination and are often poorly attended. They also tend to attract people that are already knowledgeable and interested in the issue, rather than spreading the message to new people.

A signature element of the Town's public education and outreach program is participation in the annual Faire on the Square. The SAC Chair and Town Engineer staffed a stormwater table at the Town's annual Faire on the Square, held on September 26, 2015. Residents were encouraged to pin their residence on a town map that showed outfall locations. Residents were then shown where their stormwater outfall was and it was noted that the Town has separate stormwater and sanitary sewer systems, with other information available. Over 100 residents participated.

Measure 2: Public Involvement and Participation

A key part of the Town's Public Involvement and Participation program is the Watertown Stormwater Advisory Committee. Formed in 2009, the Committee is comprised of the Conservation Agent, the Planning Director, the Town Engineer and four individuals from the general public. During the permit term, the SAC held 12 public meetings. The meetings are posted and open to the public. A large number of issues were discussed by the committee, with a large focus of the last permit term meetings related to development of the Town's Stormwater Management and Erosion Control Ordinance, as well as outreach and education.

In conjunction with the Town's public education and outreach goals discussed above, the following public meetings specifically related to stormwater were held:

- On September 10, 2015, the DPW participated in a panel forum entitled "Stormwater Trouble: Neighbor-to-Neighbor Dialogue about Storms, Floods & Water Quality." The forum was sponsored by the Belmont Citizens Forum, with assistance from the SAC. Speakers included representatives from the Towns of Belmont and Arlington, Mystic River Watershed Association, Charles River Watershed Association, and Pine & Swallow Environmental, in addition to the Watertown DPW Town Engineer. A significant portion of the discussion centered on sewer inflow/infiltration, cross-connections between sewers and storm drains, and illicit discharge detection and elimination. The SAC and Town Engineer staffed a table at the forum as well.

- On September 28, 2015, the DPW participated in a publicly advertised hearing of the Public Works Subcommittee related to pollution in the Charles River. At the meeting, the DPW and staff of Stantec and Stacey DePasquale Engineering gave a presentation of the Town's IDDE program and answered questions from Town Councilors and the public.
- Also on September 28, 2015, DPW and SAC members presented the proposed Stormwater Management and Erosion Control Ordinance to the Public Works Sub-committee. A significant part of the presentation focused on what stormwater is, why stormwater is important, and how the Town manages stormwater. The slides from the presentation are on the DPW web-site.
- On February 1, 2016, the DPW gave a presentation entitled "Stormwater Next Steps" at a public advertised Public Works Subcommittee meeting. Key elements of the update included a detailed discussion of how the Town is complying with the current NPDES Phase II permit, as well as information related to the upcoming permit, and updates on the Town's IDDE and inflow/infiltration (I/I) programs.

In addition to the above meetings, stormwater management was discussed as part of the following Public Works Subcommittee meetings:

- At the Mt. Auburn Street and Common Street meeting held on May 14, 2015, it was specifically noted that stormwater management, through improved drainage, reduction in paved area, and runoff control, were key goals of the project.
- A meeting to discuss maintenance of planting strips was held on July 13, 2015. The stormwater benefits of providing tree lawns instead of paved borders was included.
- During the 2016 Road Program presentation given on February 4, 2016, stormwater opportunities and challenges arising during road reconstruction was discussed.

The Town reevaluated its rain barrel program during the permit year. The Town only sold two rain barrels in 2014 and two in 2015. Rain barrels are available for sale and pick-up at the DPW year-round. The Town worked with its distributor, the Great American Rain Barrel Company, to develop additional advertising materials for use in the next permit year.

The Town also reevaluated its catch basins stenciling program. The Town has had great difficulty obtaining public participation in this program. Instead, DPW staff performed storm drain stenciling during the summer in the Watertown Square area. Additional information about the program was placed on the web-site.

Measure 3: Illicit Discharge Detection and Elimination

The IDDE Program activities continued during Permit Year 13, with a focus in drainage sub-areas 11, 12, 20, 33, 99, and 109. This past year, 178 manholes were inspected and tested for the presence of illicit connections indicator parameters. There were also 187 building inspections performed. Approximately 13,180 linear feet of sewer pipe and 4,060 linear feet of drain pipe were inspected by CCTV during 2015. Through the end of 2015, a total of 43 illicit discharges have been identified and 36 have been corrected removing an estimated 2,288 gpd of illicit discharges to public

waterways.

Measure 4: Construction Site Stormwater Runoff Control

A key accomplishment during Permit Year 13 was adoption of the Stormwater Management and Erosion Control Ordinance. The Ordinance requires projects that reach certain thresholds to obtain a permit from DPW. The two major thresholds include creation of 500 square feet or more of impervious area, and disturbance of more than 5,000 square feet of land. Rules and Regulations have also been developed and are anticipated to be adopted in the current permit year.

The DPW continued to use the *DPW Site Plan Review—On-site Drainage Requirements* and *Site Plan Review Checklist for Single and Two-Family Construction*, as part of site plan review. These documents summarize the DPW standards and policies for providing stormwater management on projects that require DPW review and approval. The document sets specific requirements for construction period and post-construction stormwater controls and references the State Stormwater Management Handbook.

Measure 5: Post-Construction Stormwater Management in New Development and Redevelopment

As noted above, the Stormwater Management and Erosion Control Ordinance was adopted during Permit Year 13. Rules and Regulations have also been developed and are anticipated to be adopted in the current permit year.

Measure 6: Pollution Prevention and Good Housekeeping in Municipal Operations

During Permit Year 13, the Town rewrote its catch basin cleaning specification to address procurement and administration issues noted in the Year 12 annual report. Annual catch basin cleaning resumed during the permit year and 2,749 catch basins were cleaned. DPW also began implementing a new control system for its salt distribution equipment. This computerized system adjust the salt spreading application rate of a vehicle with the speed of the vehicle. Therefore, when a vehicle travels more slowly, a lower application rate is applied. This is anticipated to reduce salt usage.

Other MS4 operation and maintenance activities continued, such as street sweeping and integrated pest management continued throughout the year.

Optional

- 604(b) Grant: DPW, working in conjunction with the SAC and Department of Community Development and Planning, applied for and received a 604(b) Water Quality Management Planning Grant from MassDEP. The grant funds various planning activities that support identification and implementation of green infrastructure and other techniques to improve water quality in impaired waters.

The proposed project seeks to improve the Town's capacity to address stormwater issues and invest in green infrastructure. Key elements include: identifying where green infrastructure practices are likely to be effective, educating Town staff, boards, committees and residents about the benefits and practicalities of green infrastructure, and developing a list of priority sites and projects that could be implemented in the future.

Ultimately, the results of the grant can be coordinated with currently planned and future capital planning activities, in accordance with the Town's Budget Policy Guidelines.

- Section 319 Grant: DPW, working in conjunction with the SAC, DCDP, and the Charles River Watershed Association, applied for and received a 319 Nonpoint Source Competitive Planning Grant from MassDEP. The grant funds implementation projects that seek to improve water quality and reduce impairments by installing green infrastructure, such as bioswales and tree filter pits, on Edenfield Avenue. As part of road reconstruction, the Town typically performs repairs and upgrades to the existing drainage system as needed. The Town has an interest in incorporating green infrastructure into its road program as a way to gain further benefit from our road reconstruction projects, by reducing runoff rates, improving water quality, and increasing awareness of stormwater among our residents. The project, which also provides a “road diet” for Edenfield Ave., is expected to build the Town's capacity to provide green infrastructure as part of other road reconstruction projects.

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
1A Revised	Distribute public education brochures	DPW, Health Dept.	1 brochure each permit year Develop, print and distribute brochures.	<ul style="list-style-type: none"> • Brochures have been placed in display racks at Town facilities including DPW Office, Town Hall, Libraries, and Schools. • The 1-page flyer entitled <i>Summer Storm Preparedness</i> was posted on the DPW web page. The flyer included reminders to not blow mowed grass unto the street as it blocks drain grates, to avoid using bark mulch near the street as it can float and block storm drain grates, and to keep storm drain grates clear. • A flyer, entitled <i>Watertown Rain Drain Pain</i> was finalized, printed, posted on the DPW web-site and made available. • The Stormwater Advisory Committee (SAC) continued to maintain its web page. 	<ul style="list-style-type: none"> • Continue distribution and displaying of “Protecting Our Waterways”, “Reducing I&I” and Phosphorous in the Charles River” brochures as well as SUASCO stormwater education materials. Print additional brochures and purchase additional SUASCO postcards and posters as needed to maintain adequate supply for distribution at annual environmental events and for posting at DPW and Town building venues. • Distribute stormwater education materials at the annual Faire on the Square. • Continue to update and enhance the Stormwater Advisory Committee website.

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
1B Revised	Participate in municipal services exhibit at local mall <i>The Town's annual Faire on the Square is effectively a municipal services day.</i>	DPW	1 day per permit year	<ul style="list-style-type: none"> • The Faire on the Square was held on Saturday, September 26, 2015. DPW staffed a table and included public education materials about stormwater management. • The SAC Chair and Town Engineer staffed a stormwater table at the annual Faire on the Square. Residents were encouraged to pin their residence on a town map that showed outfall locations. Residents were then shown where their stormwater outfall was and it was noted that the Town has separate stormwater and sanitary sewer systems, with other information available. Over 100 residents participated. 	<ul style="list-style-type: none"> • Continue staffing a table at the annual Faire on The Square event.
1C Revised	Send stormwater information and work with science depts.	DPW/public schools	Continue meetings and discussions with High School Science Dept. for enhancing curriculum for understanding of impacts to public waterways and measures for stormwater pollution prevention.	<ul style="list-style-type: none"> • The SAC completed work with the Radio and Video Production teacher at Watertown High School. Three public service announcements related to stormwater are being aired in rotation on the online radio station, WCAC. • On November 3, 2015, the Town Engineer and Conservation Administrator gave a presentation about erosion and sediment control to a group of sixth graders at the Jewish Community Day School. 	<ul style="list-style-type: none"> • Continue seeking outreach and education opportunities in the schools.
1D	Outfall Signs	DPW/Community Groups	Label all outfalls with signs	<ul style="list-style-type: none"> • The DPW performed a comprehensive review of outfall signage and has developed a list of damaged or missing signs. 	<ul style="list-style-type: none"> • Implement repairs and replacements and continue inspections.

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
1E	Pet Waste Management	Health Dept., DPW and citizens	Enforcement of pet waste rules through issuance of fines by Bd. of Health or Police Verify enforcement by number of citations issued each permit year.	<ul style="list-style-type: none"> The pet waste brochure developed during Permit Year 12 continues to be available at the Health Department. 	<ul style="list-style-type: none"> Continue program.
1F	Education of restaurant owners and auto service garage owners	DPW/Board of Health	Visit and provide educational materials on preventing stormwater pollution at least once every 3 years.	<ul style="list-style-type: none"> In 2015, the Health Department inspected 242 grease traps at local food service establishments. 	<ul style="list-style-type: none"> Continue program.
1G	Public education through environmental speaker series	DPW, Environmental Committee, Stormwater Advisory Committee and other Town committees and citizen groups	Three to five annual speakers or movies on environmental topics	<ul style="list-style-type: none"> Public meetings and educational opportunities held during Permit Year 13 are listed in Section 2A. The SAC discussed the ability of the committee to support an environmental speaker series as well as the overall effectiveness such a series would have in educating the general public. The SAC concluded that it did not have the capacity to provide a speaker series and that it would not reach new audiences. The SAC continues to support providing educational opportunities as discussed in Section 2A. 	<ul style="list-style-type: none"> Continue to evaluate overall effectiveness of the Town's outreach program.

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
1F New	DPW Web Page	DPW, Stormwater Advisory Committee		<ul style="list-style-type: none"> • The DPW updated its web page to include a stormwater page. The tab for the page is featured as a prominent button on the home page. The web page includes facts and figures about the Town’s stormwater system, information on rain barrels, a summary of DPW stormwater programs for residents, and other stormwater information. • The DPW updated its web page include a DPW permits page. The DPW site plan review and stormwater management requirements for development are included on this page. Also included is an EPA brochure entitled “10 Steps to Stormwater Pollution Prevention on Small Residential Construction Sites.” • The Town’s Permit Year 12 annual report, covering April 2014 to March 2015 was placed on the DPW web site. 	<ul style="list-style-type: none"> • Continue to maintain and update the DPW web page as needed.

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
2A	Public stormwater meetings	Stormwater Advisory Comm. DPW, Planning Bd., Con. Comm.	1 meeting per permit year with S.A.C., Con. Comm., Planning Bd., Bd. of Health & DPW	<ul style="list-style-type: none"> • The Stormwater Advisory Committee held 12 public meetings during Permit Year 13. • On May 14, 2015, a Public Works Sub-committee meeting was held to discuss the Town’s Mt. Auburn Street and Common Street road reconstruction. Presentations were made by the Town’s Engineering consultant and it was specifically noted that stormwater management, through improved drainage, reduction in paved area, and runoff control, were key goals of the project. • On September 28, 2015, DPW and SAC members presented the proposed Stormwater Management and Erosion Control Ordinance to the Public Works Sub-committee. A significant part of the presentation focused on what stormwater is, why stormwater is important, and how the Town manages stormwater. The slides from the presentation are on the DPW web-site. 	<ul style="list-style-type: none"> • Continue to conduct formal and informal meetings on stormwater issues with the Stormwater Advisory Committee and other Town bodies.
2B Revised	Community Clean Up <i>Participate in/support of community clean up</i>	DPW/volunteers DPW supports community clean up	1 cleanup day per year. Participation by at least 100 volunteers Support 1 cleanup day per year. Aim for participation by at least 50 volunteers	<ul style="list-style-type: none"> • A community clean-up event took place on April 25, 2015 as part of the River Clean-up event described below in BMP 2C. • The Town Tree Warden authorized the planting of 150 trees throughout the Town. At the Arbor Day Event held at the Cuniff School on May 1, 2015 and spoke to students about issues of stormwater. 	<ul style="list-style-type: none"> • Continue to support annual community clean up events through supply and pick-up of disposal bags • Tree planting is an annual program and will continue next year.

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
2G	CB Stenciling Program	DPW/SAC/ Volunteers	Stencil 25% of key CBs in Town each year over 4 years	<ul style="list-style-type: none"> The DPW has not been successful getting participation in the storm drain stenciling program. Additional information was placed on the web-site. DPW staff performed storm drain stenciling during the summer in the Watertown Square area. 	<ul style="list-style-type: none"> Continue to seek opportunities to engage the public in catch basin stenciling or perform stenciling in-house.
2H	Water Quality Monitoring Program	DPW/Environmental Community Groups/Volunteers	Conduct Water Quality Monitoring quarterly of waterways known to have high bacterial counts.	<ul style="list-style-type: none"> A total of 161 water quality samples were taken at the MS4 outfalls, non-municipal outfalls and in-system locations during Permit Year 13 including 40 samples under wet weather conditions. 	<ul style="list-style-type: none"> Continue and further refine water quality monitoring program.
2I	Adopt a Storm Drain Program	DPW/SAC/ Environmental Community Groups/Volunteers	Participation by 15- 20 Adopt a Storm Drain volunteers each year.	<ul style="list-style-type: none"> Due a lack of general interest by the public, the Town was unable to draw up support for the proposed Adopt a Storm Drain Program and has decided to end the program due to a lack of public interest. 	<ul style="list-style-type: none"> N/A
2J	Rain Barrel Distribution	DPW	Distribute rain barrels for purchase by Watertown residents.	<ul style="list-style-type: none"> The Town sold 2 rain barrels during FY 15. The Town worked with the Great American Rain Barrel Company to develop press releases to better advertise the program. 	<ul style="list-style-type: none"> Provide press releases to local newspapers and continue program.
2K	Healthy Lawns and Landscapes Workshop	DPW/SAC	Conduct a workshop on lawn and landscape maintenance measures that reduce impacts to the Town's waterways.	<ul style="list-style-type: none"> The DEP is no longer offering the Healthy Lawns Workshop. There are currently no plans for future workshops. 	<ul style="list-style-type: none"> N/A

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
2L	Mercury Collection	DPW / Local Hardware Store	Collect and properly dispose of mercury containing household items	<ul style="list-style-type: none"> The Town received a mercury shed provided by the Wheelabrator North Andover consultant and began collections of small mercury bearing devices at the DPW in early summer 2008. A local vendor is collecting fluorescent tubes for the Town in concert with the program. The program continued successfully in Permit Year 13. 	<ul style="list-style-type: none"> Continue program.
2M	Curbside CRT Collection	DPW / Private Waste Hauling Company	Collect and properly dispose of Cathode Ray Tube TV's and computer monitors	<ul style="list-style-type: none"> The Town provides curbside collection of CRTs in addition to allowing homeowners to bring them to the Drop-off Center continued successfully. 	<ul style="list-style-type: none"> Continue program.
2N	Tire Collection Drop Off	DPW/ Private Waste Hauling Company	Elect and properly dispose of tires	<ul style="list-style-type: none"> The Town is providing two annual drop off events, as part of larger recycling events. 	<ul style="list-style-type: none"> Continue program.

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
3A	Work with private consultants	Coordinate with DPW	Perform top down investigation of entire MS4 to detect illicit connections within 3 years Eliminate identified illicit connections within 3 months of detection. Most illicit discharge sources detected and eliminated within 5 years	<ul style="list-style-type: none"> • DPW has worked with private consultants to implement the Town’s IDDE program. Additional information is provided in the quarterly reports submitted to the EPA and posted on the DPW web site. • Since 1997, a total of 169 out of 172 (98%) key junction manholes have been inspected and monitored, and tested for the presence of indicator parameters. Manholes with positive findings are traced upstream to locate the source of the illicit connection, and repairs made as necessary. • The Town estimates approximately 2,200 gpd of illicit discharges have been removed from the drainage system as part of the IDDE Program. 	<ul style="list-style-type: none"> • Continue implementing the Town’s approved IDDE program. • Continue investigations in high priority outfalls drainage areas and re-evaluate upstream tributary areas to outfalls where high bacterial counts continue to be observed.
3B	Work with various Town agencies	Building, FD, Con. Comm, DPW	Training of public employees on illicit discharges completed within one year	<ul style="list-style-type: none"> • The DPW continues to coordinate with the Health Department about improper waste disposal issues and possible impacts to MS4 and water bodies. 	<ul style="list-style-type: none"> • Continue joint efforts of DPW, SAC, Building Department and other Town Depts. and Agencies regarding the serious nature of illicit connections and to be continually on the lookout while working around Town for incidents of illicit discharges so they can be promptly addressed.

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
3C Revised	Update Stormwater Map	DPW/Consultants	Update map each year during permit period as new information becomes available. Complete supplemental info. Mapping by 2007. Update map each year during permit period as new information becomes available.	<ul style="list-style-type: none"> The sewer, drain, and drainage area mapping was updated based on the results of field investigations and record plans. 	<ul style="list-style-type: none"> Continue updating the base mapping as needed.
3D	TV, smoke and dye testing	DPW/Consultants		<ul style="list-style-type: none"> Approximately 13,180 linear feet of sewer pipe and 4,060 linear feet of drain pipe were inspected by CCTV during 2015. 187 building inspections were performed during 2015. 	<ul style="list-style-type: none"> Continue investigations in accordance with Town's Illicit Discharge Detection and Elimination Program, approved by the EPA.
3E	Remove dry weather overflows	DPW/Consultants	Eliminate dry weather overflows within 1 year	<ul style="list-style-type: none"> 15 sources of dry weather flow were identified in 2015. A total of 43 illicit discharges have been identified since program inception. 9 sources of dry weather flow were removed from the system during 2015. To date, 36 illicit discharges have been removed from the system. 	<ul style="list-style-type: none"> Continue IDDE program to remove dry weather sources of flow to the drainage system.

3a. Additions

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
3F	IDDE Educational Outreach	DPW/SAC/Health Dept./Con. Comm./Volunteers	Include IDDE Education with public education goals under BMP #1.	<ul style="list-style-type: none"> • Additional information and graphics were added to the DPW Illicit Discharge Detection Program web-page. • On September 28, 2015, the DPW participated in a publicly advertised hearing of the Public Works Subcommittee related to pollution in the Charles River. At the meeting, the DPW and staff of Stantec and Stacey DePasquale Engineering gave a presentation of the Town’s IDDE program and answered questions from Town Councilors and the public. • Updates on the IDDE program were provided at an SAC meeting. 	<ul style="list-style-type: none"> • Provide updates to the SAC and public as needed, maintain and update the IDDE web-page.
3G Revised	Prohibition of Illicit Discharges	DPW / SAC	Since 1990, town regulations “Sanitary Sewer and Storm Drain Regulations” have forbidden improper discharges to the storm drains. Supplant existing Storm Drain and Sanitary Sewer Regulations with more specific language regarding prohibition of Illicit Discharges to the MS4. Draft supplanting Illicit Discharge text for Town Council approval by the end of 2010.	<ul style="list-style-type: none"> • The “Ordinance Prohibiting Illegal Discharges into the Storm Drainage System” (Chapter 97 of the Code of Ordinances) was adopted by the Town Council on May 11, 2011. 	<ul style="list-style-type: none"> • Use the Ordinance for enforcement, as needed.

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
4A Revised	Update Town Ordinances	DPW, SAC, Planning, Con. Comm.	Update ordinance by the Jan 2015 and adopt by end of 2015.	<ul style="list-style-type: none"> The Stormwater Management and Erosion Control Ordinance was adopted by the Town Council on February 23, 2016. 	<ul style="list-style-type: none"> Adopt Rules and Regulations to implement the Ordinance.
4 B Revised	Coordinate construction reviews and site inspections	DPW, Planning, Con. Comm.	Internal review and 1 site inspection per project with 100% compliance with sediment and erosion controls by site operators.	<ul style="list-style-type: none"> Relevant departments review and inspect projects at least once, with frequency determined based on the scope of work. Reviews include all relevant DPW divisions are included in review process. 	<ul style="list-style-type: none"> Continue site development review program. Pay special attention to the plans and details for controlling erosion and sedimentation. Continue to conduct site inspections, as appropriate, for each new construction project.
4C Revised	Standard Construction Details Construction Standards	DPW, Planning, Con. Comm.	Update details 1 time during permit period. Require 100% of the projects with areas of 1 acre or more to include in their plans the necessary measures to adequately control erosion and sedimentation in stormwater runoff that meet or exceed those in the Town's standards and the MA DEP Stormwater Management Policy performance standards, whichever is more stringent.	<ul style="list-style-type: none"> Standard erosion and sediment control details are available on the DPW web site and distributed as-need. 	<ul style="list-style-type: none"> Review standards and update as needed. Provide developers with standards and review plans and site conditions for compliance.
4D	Standard Erosion Control Details	DPW, Planning, Con. Comm.	Update details 1 time during permit period. Require 100% of the projects with areas of 1 acre or more to include in their plans the necessary measures to adequately control erosion and sedimentation in stormwater runoff that meet or exceed those in the Town's standards and the MA DEP Stormwater Management Policy performance standards, whichever is more stringent.	<ul style="list-style-type: none"> See Item 4C above. 	<ul style="list-style-type: none"> Review standards and update as needed. Provide developers with standards and review plans and site conditions for compliance.

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
4E	Oil/gas separators for areas greater than 4 parking spaces.	DPW	100% of all new construction sites that connect to the Town system with plans for 4 or more parking spaces to include oil/gas separators.	<ul style="list-style-type: none"> • During Permit Year 13, there was one parking lot with greater than 4 spaces that was repaved. An oil/water separator was added to the drainage system prior to discharge. 	<ul style="list-style-type: none"> • Continue requiring drainage retrofits at parking lot repaving sites meeting the parking space criteria.
4F	DPW Construction Standards	DPW	Enacted in 2002, project proponents appearing before DPW must comply with provisions. Require 100% of projects to include in their plans the necessary measures to adequately control erosion and sedimentation in stormwater runoff that meet or exceed those in the Town's standards and the MA DEP Stormwater Management Policy performance standards, whichever is more stringent.	<ul style="list-style-type: none"> • DPW continued to enforce the <i>DPW Site Plan Review—On-site Drainage Requirements</i>. • DPW continued to require Applicants complete a checklist entitled <i>Site Plan Review Checklist for Single and Two-Family Construction</i>. 	<ul style="list-style-type: none"> • Continue use of these requirements and incorporate any updates required due to the promulgation of the new <i>Stormwater Management and Erosion Control Ordinance</i>.
4G	Public observation and reporting	DPW/Board of Health	Implement procedures for receipt and follow-up of public comments on construction site violations of the Town's standards for erosion and sediment control by the end of 2007.	<ul style="list-style-type: none"> • DPW has a link on its website that allows the public to report any problems or concerns they may have with activities or conditions at construction sites. • During Permit Year 13, three comments were received from the public about construction issues various locations in Town. Each comment was addressed by the DPW/DCDP/BOH, working with the applicant. 	<ul style="list-style-type: none"> • Continue monitoring any public comments, concerns or questions regarding construction activities and impacts to stormwater quality.

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
5A Revised	Update Town Ordinances	DPW, SAC, Planning, Con. Comm.	Draft an ordinance by the January 2015 requiring the implementation of post construction runoff controls and long-term operation and maintenance of such controls. The goal for the approval of this ordinance by the Town and its adoption is by the end of 2015.	<ul style="list-style-type: none"> The Stormwater Management and Erosion Control Ordinance was adopted by the Town Council on February 23, 2016. 	<ul style="list-style-type: none"> Adopt Rules and Regulations to implement the Ordinance.
5B Revised	Update BMP's and details <i>Post construction runoff controls strategies.</i>	DPW, Planning, Con. Comm.	<p>Reduce the percentage of impervious surfaces associated with new developments and redevelopment projects of one acre and above to 25% of the site or less.</p> <p>Reduce sedimentation in stormwater runoff and local water bodies downstream of the development as determined from routine observations.</p> <p>Experience has shown reducing impervious areas by 25% or more is unrealistic. The new goal is to reduce impervious areas as much as practicable provide additional stormwater management controls to the maximum extent practicable.</p>	<ul style="list-style-type: none"> DPW reviews site plans in accordance with the document entitled <i>DPW Site Plan Review—On-site Drainage Requirements</i>, which summarizes the DPW standards and policies for providing stormwater management on projects that require DPW review and approval. 15 residential projects were reviewed and approved during the permit year. Development projects over 1 acre subjected to Plan Reviews reviewed and approved: 480 Arsenal St., 65 Grove St., 45 Bacon/60 Howard Sts., 653 – 655 Mt. Auburn St., and 202 – 204 Arsenal St. There was one commercial project under 1 acre reviewed and approved. 	<ul style="list-style-type: none"> Continue to work on strategies for control of post-construction runoff using non-structural and structural BMPs. Continue to work with developers throughout the permitting process to reduce impervious areas practicable and provide additional stormwater management controls to the maximum extent practicable. The Town requires projects to meet the State Stormwater Management Standards at a minimum.

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
6A	Clean and inspect outfalls	DPW	Clean and inspect at least 1 time per year	<ul style="list-style-type: none"> Outfalls are inspected routinely as part of the Town's IDDE program and in response to public comment. Maintenance is performed as-needed. 	<ul style="list-style-type: none"> Continue program
6B	Clean catch basins	DPW	Clean every catch basin at least once every 2 years	<ul style="list-style-type: none"> The Town revised its catch basin cleaning specification to address previous procurement and administration issues. 2,749 catch basins were cleaned during calendar year 2015, and 456.28 tons of catch basin debris were disposed of. 	<ul style="list-style-type: none"> Annual cleaning of catch basins to continue.
6C	Street Sweeping	DPW	2 street sweepers employed year round, weather permitting to clean all town streets at least once per year.	<ul style="list-style-type: none"> All main streets and major arterials received more than 2 street sweepings during calendar year 2015. All other streets received sweeping twice during the year. A total of approximately 249.8 tons of street sweeping debris was collected and properly disposed during 2015. 	<ul style="list-style-type: none"> Continue program
6D	Inspection and maintenance of stormwater system	DPW	Inspect problematic system locations of the MS4 at least once per year and more frequently as conditions dictate.	<ul style="list-style-type: none"> Problem locations were reviewed as often as possible/needed, but minimally once per year. 	<ul style="list-style-type: none"> Continue program
6E	Update Emergency Management Plan	DPW / Emergency Services	Update Plan 1 time per permit period	<ul style="list-style-type: none"> DPW met with the BOH as well as the Police and Fire Departments on a routine basis to discuss emergency management issues. 	<ul style="list-style-type: none"> Review and update Emergency Management Plan as appropriate, continue departmental coordination meetings.

6a. Additions

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
6F	EPA/DPW Spill Truck	DPW	Respond to spill emergencies.	<ul style="list-style-type: none"> The truck is available as needed. During the permit year, there were no major spills and the spill truck was not deployed. 	<ul style="list-style-type: none"> Available as needed.
6G	Integrated Pest Management Program	DPW	Use IPM methods to exclude pesticides on Town properties.	<ul style="list-style-type: none"> DPW did not apply pesticides to public parks, open spaces or other greenways during the reporting period. 	<ul style="list-style-type: none"> Continue IPM program for open spaces, parks and greenways under Town jurisdiction.
6H	Wet weather testing.	DPW and consultants	DPW will supplement existing testing program with wet weather testing 5-6 times per year.	<ul style="list-style-type: none"> Wet weather testing of the MS4 was performed on 2 occasions during Permit Year 13. A total of 40 water quality samples were collected from outfalls and surface water locations under wet weather conditions and sent to a lab for analysis. 	<ul style="list-style-type: none"> Continue wet weather testing in accordance with the approved IDDE plan.
6I	Reduce Salt/Sand Usage	DPW	Reduce salt and sand use by 5% normalized for # and severity of storms.	<ul style="list-style-type: none"> The DPW evaluates weather and road conditions during each winter event to balance the use of road salt with the needs of public safety. The Town is implementing a computerized control system for its salting equipment to improve salt distribution and application efficiency. The system adjusts the salt application rate with vehicle speed. This is anticipated to provide a significant reduction in salt usage. 	<ul style="list-style-type: none"> Continue best practices for salt application. Continue implementation of Cirrus control system.
6J	Train public works employees on pollution prevention and good housekeeping techniques.	DPW	Gather training materials and implement training to public employees by July 31, 2006.	<ul style="list-style-type: none"> Pollution prevention and good housekeeping practices are implemented and expanded whenever possible. 	<ul style="list-style-type: none"> Continue to encourage public works employees to follow pollution prevention and good housekeeping practices.

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 – Permit Year 14
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

See IDDE Quarterly reports submitted to EPA

Part V. Program Outputs & Accomplishments (OPTIONAL) Programmatic

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

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	20,000
Stormwater management committee established (Stormwater Advisory Committee)	(y/n)	Y
Stream teams established or supported	(# or y/n)	N
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	y (entire length of Charles River)
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	8
▪ community participation	(%)	137 cars
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	Y

Legal/Regulatory

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

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	27
System-Wide mapping complete	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened	(# or %)	100%
Illicit discharges identified	(#)	5
Illicit connections removed	(#) (est. gpd)	4 603 gpd
% of population on sewer	(%)	99.99 %
% of population on septic systems	(%)	<0.01%

Construction

Number of construction starts (>1-acre)	(#)	7
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100%
Site inspections completed	(# or %)	100%
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)	n/a

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	Annually
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Annually
Total number of structures cleaned	(#)	2,749
Storm drain cleaned	(LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		
Cost of screenings disposal	(\$)	

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	1-2x
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	2+
Qty. of sand/debris collected by sweeping	(lbs. or tons)	249.8 tons

Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	LoRusso Landfill – Plainville, MA
Cost of sweepings disposal	(\$)	\$4,101.54
Vacuum street sweepers purchased/leased	(#)	2
Vacuum street sweepers specified in contracts	(y/n)	N

Reduction in application on public land of: (“N/A” = never used; “100%” = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management program mitigating against use of chemicals in place since 2001.		

Anti-/De-Icing products and ratios	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	95% 5%
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	Y
Estimated net reduction in typical year salt application	(lbs. or %)	
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N