

Municipality/Organization: City of Waltham, MA

EPA NPDES Permit Number: MAR0410066

MassDEP Transmittal Number: X274892

Annual Report Number & Reporting Period: Year 14
April 1, 2016 – March 31, 2017

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2017)

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: _____

Stephen A. Casazza

Printed Name: Stephen A. Casazza, P.E.

Title: City Engineer

Date: _____

28 April 2017

Part II. Self-Assessment

The City of Waltham has completed a self-evaluation regarding its storm water management activities for Permit Year 14. The City of Waltham continues to be fully engaged with its storm water management program and is in compliance with the 2003 NPDES Phase II Small MS4 General Permit. The City has retained the services of a consulting engineering firm in October 2013 for a period of three years to assist the City with the implementation of the Small MS4 General Permit. Waltham acknowledges that some aspects of its storm water management program can be improved and the implementation of some of the Best Management Practices (BMPs) proposed for Permit Year 14 requires additional time for full implementation.

The City has been aggressively planning and preparing for the requirements of the new MS4 Permit effective July 1, 2017.

- A Stormwater Workshop was conducted on February 1, 2017 with attendance from various City Departments. The goal of the workshop was to provide details of the New MS4 Permit and initiate coordination between various Departments.
- Representatives from EPA and the DEP were invited for meetings with the City's Environmental Committee to provide specific guidance on the New MS4 Permit requirements.
- The City is also participating in the Charles River Stormwater Collaborative meetings closely working with the City of Newton.
- The City is also collaborating closely with the Charles River Watershed Association (CRWA). The City invited CRWA to partner and submit an application for the "Water Quality Management Planning Grant 604b Program". The proposed project includes retrofit designs of municipal facilities with Green Infrastructure to improve the stormwater runoff to the Charles River.

A brief evaluation of each minimum control measure is as follows:

1) Public Education and Outreach

The City of Waltham continues to publicize information about its storm water program mainly on the City's web-site. The storm water site within the Engineering Department's web-site has functioned continuously through Permit Year 14 and contained links to related documents such as the City's Storm Water Ordinance, the storm water program web-site, the general storm water brochure, informational brochure for businesses, and pet waste management brochure as well as the Illicit Discharge Detection and Elimination (IDDE) Program web-site. Links to EPA, MassDEP and MWRA were also available. Additionally, links to the EPA, DEP web-sites, and information on release, spill, and tank removal issues as well as other storm water-related links (such as LID development) continued to be active in the City's Emergency Management web-page.

The Recycling Department web-site provides information on recycling, yard waste and hazardous waste management. A single consolidated recycling and hazardous waste management newsletter is being prepared for spring 2017. This newsletter will also be made available in Spanish language. A styrofoam collection day will be added in addition to the eight (8) hazardous waste collection days.

The City purchased a tabletop display board titled, "Stormwater Matters - Outreach and Participation" at a cost of \$1,550 from SuAsCo. The City has and will continue to display this board for a period of one month at each of its elementary schools. The board was also on display at the Waltham Public Library for a period of 6 weeks in 2016.

2) Public Involvement and Participation

The City of Waltham performed several storm water-related activities in collaboration with residents. An example is the stream cleanup event along Chester Brook (#231-249 Lexington Street) as part of the Earth Day volunteer City-Wide cleanup that was held on April 30, 2016. Numerous volunteer cleanup activities along surface water bodies and educational walks/tours have been organized by the Waltham Land Trust.

Collaboration with local educational institutions and residents continued this year in the form of 2 interns from Brandeis University to provide them with environmental learning experiences. The Waltham Energy Action Committee is working with the Transportation Committee to promote bike rides, walking, solar energy and encouraging energy audits.

3) Illicit Discharge Detection & Elimination (IDDE)

The City of Waltham is successfully implementing its IDDE Program. Identified sources of contamination are being removed from the City's storm system.

The City of Waltham completed the second construction work package which included outstanding Phase 1 outfall areas (second round of construction) along with Phase 2 outfalls (first round of construction). Design of Phase 3 of the IDDE Project is complete. Outfall inventory and dry weather sampling of all outfalls within Clematis Brook and Masters Brook watersheds and its tributaries (i.e. Sibley Brook is a tributary to Masters Brook) has been completed. Wet weather sampling has been performed in nineteen out of thirty-nine inventoried outfalls and is on-going.

Work completed between January 31, 2016 and July 31, 2016 included CCTV inspection and smoke testing; correction of drainage pipeline mapping; design of repairs; completion of Excavation Work Package 1; completion of the South Street illicit connection construction project. Dry weather sampling at two outfalls (Elm Street and South Street) and follow up sampling in junction manholes in 28-A (Elm Street Area) was conducted on March 25, April 7 and May 12, 2016.

Work completed between July 31 and December 31, 2016 included design and construction of repairs at 51 Thornton Road (SIB-7) and at the Waltham Housing Authority (MBN-3). A Trenchless Work Package #2 has been prepared for public bid and construction is scheduled for spring 2017.

The City prepared and submitted two (2) semi-annual IDDE Program Reports to the EPA: #16, July 2016 and #17, January 2017. (See Attachment 3)

4) Construction Site Storm water Runoff Control

The City of Waltham continues to monitor construction erosion control management on large construction projects. The City's Engineering Department receives periodic reports for storm water compliance from the former Polaroid Site and the 110 Bear Hill Road development, which is located within a drinking water supply watershed. Final draft rules and regulations describing clear requirements for construction projects of one acre or more are set to be in front of the City Council by the Mayor this permit year for review and approval.

5) Post-Construction Storm water Management in New Development and Redevelopment

The City of Waltham has continued to implement its storm water on-site treatment policy for new development and redevelopment. In an attempt to make this policy a firm rule, the City of Waltham has drafted post-construction storm water management rules and regulations for developments of one acre or more that are expected to be sent by the Mayor to the City Council for approval this permit year.

6) Pollution Prevention and Good Housekeeping in Municipal Operations

Most of the proposed measures for Permit Year 14 were executed by the City of Waltham. These activities will be continued during Permit Year 15 to guarantee proper storm water management and avoid storm water pollution. The Municipal Standard Operating Procedure (SOP) for proper management of waters in existing or new City –owned and operated spray parks has been developed and is pending final implementation.

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
<p>1.1</p> <p>Revised by:</p> <p>Recycling Coordinator</p>	<p>Recycling Department Web-Site</p>	<p>Recycling Coordinator</p>	<p>Goal in PY14: Continue to have an operational web-site and achieve a similar number of hits with respect to PY13</p> <p>Goal in PY15: Keep improving web- site and keep reaching out to residents with no computer availability. Mail information (mailer) annually to every household. This covers residents with no computer access. Spanish translation of the mailer will be distributed as needed and posted on web site.</p>	<p>Planned Activity: Great efforts have been made to revamp the new Recycling Department web-site.</p> <p>Status: The web-site received a total of 47,340 hits since April 1, 2016 and has been fully active.</p> <p>Planned Activity: The City of Waltham will continue to mail information to those residents with no computer availability, particularly seniors.</p> <p>Status: A mailer including Recycling, Yard Waste and Hazardous waste information was mailed city-wide (22,000 households) early March 2017.</p>	<p>Keep improving web-site and keep reaching out to residents with no computer availability. Examples include:</p> <p>The 2016-2017 <i>Recycling, Yard Waste, and Hazardous Waste Mailer</i> will be mailed out city-wide this year. Capitol Waste, City's waste and recycling vendor will provide funding for printing and mailing.</p> <p>The City will promote its rain barrel program and encourage the residents to conserve rainwater.</p> <p>The City of Waltham will continue to distribute the Mass Water Resources Authority's booklet, <i>Guide to Reducing Household Hazardous Products</i>. There has been a strong show of interest in this booklet.</p>

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
1.2 Revised by: Engineering	Targeted Communications	Engineering	Goal in PY 14: Keep web-links active during PY14 Goal in PY15: This task is complete	Planned Activity: Continue to have an operational web-site where all information is available to the general public. Status: Complete	This task is complete
1.3 Revised by: Engineering	NPDES Phase II Brochure	Engineering	Goal in PY 14: Achieve at least 300 hits to the new storm water brochure Goal in PY15: Achieve similar number of hits as PY14	Planned Activity: The brochure will be updated and distributed as necessary and/or posted on the City’s web-site after the new NPDES PII Small MS4 General Permit is issued. Status: There were 250 hits on the storm water brochure on the City’s website in PY14. The new NPDES PII Small MS4 General Permit has not been issued to date. Therefore, the storm water brochure has not been updated.	The City plans to consolidate and streamline stormwater information at one dedicated central location on the City's website. Stormwater brochures that have been previously prepared will be updated and posted on the City's website such as homeowners, commercial, industrial, institutional etc. in accordance with the new NPDES MS4 Permit.
1.4 Revised by: Engineering	Watershed Signage	Engineering in cooperation with the City of Cambridge	Goal in PY14: Keep adequate level of signage in Cambridge Reservoir Area (as needed) Goal in PY15: Same as PY14	Planned Activity: Continue to install watershed signs in coordination with Cambridge as needed. Status: This activity has continued on an as-needed basis during PY14	Same as PY14

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
<p>1.5</p> <p>Revised by:</p> <p>Recycling Coordinator</p>	<p>Recycling Department Initiatives</p>	<p>Recycling Department</p>	<p>Goal in PY14: Continue outreach and collaboration activities with local institutions and residents</p> <p>Goal in PY15: Continue outreach and collaboration activities with local institutions and residents</p>	<p>Planned Activity: Continue the rain barrel campaign. Status: The City recently found a vendor for rain barrels.</p> <p>Planned Activity: Continue hosting students from local universities or high schools to provide them with environmental learning experiences. Status: The Department has hosted 2 interns from Brandeis University.</p> <p>Planned Activity: Continue to offer recycling bins at a \$5 cost. Status: On-going. Recycling bins now cost \$6 but residents get the first one for free. This task is now considered complete.</p>	<p>Continue outreach and collaboration activities with local institutions and residents.</p> <p>Host two interns per semester from Brandeis University who research and write news articles for newsletter, which is e-mailed to residents and posted on Recycling website.</p>
<p>1.6</p> <p>Revised by:</p> <p>Engineering</p>	<p>Other Targeted Communications</p>	<p>Engineering</p>	<p>Goal in PY14: Continue to have the business brochure active for Waltham residents and business owners</p> <p>Goal in PY15: Continue to have the business brochure active for Waltham residents and business owners</p>	<p>Planned Activity: The business brochure was posted on the Engineering Department’s website in May 2012.</p> <p>The City purchased a tri-fold on stormwater education and has displayed it in the elementary schools.</p> <p>Status: A total of 2 hits were recorded during PY14.</p>	<p>Continue to have the business brochure active for Waltham residents and business owners.</p> <p>The City will coordinate with <i>128 Business Council of Waltham</i> and the <i>West Suburban Chamber of Commerce</i> to help distribute the business brochure to the targeted audience.</p>

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
2.1 Revised by: CPW	Stream Cleanup 231-249 Lexington Street along Chester Brook	CPW	<p>Goal in PY14: Hardy Pond annual weed harvesting in collaboration with the Hardy Pond Association</p> <p>Goal in PY15: Continue collaboration with Hardy Pond Association and CRWA</p>	<p>Planned Activities: Participate in the annual weed harvesting at Hardy Pond with the Hardy Pond Association Status: Completed</p> <p>Planned Activities: Continue collaboration with CRWA to cleanup public shores along the Charles River on Earth Day Status: Completed</p> <p>Planned Activities: CPW lead Earth Day volunteer City-Wide cleanup on April 30, 2016 Status: Completed</p>	<p>Continue collaboration with Hardy Pond Association for cleanup. Weed harvesting is a contracted project and is funded for July 2016.</p> <p>CPW lead Earth Day volunteer City-Wide cleanup on April 30, 2016.</p> <p>Earth Day Tree Planting is planned for April 28, 2017</p> <p>City clean up is planned for April 29, 2017</p>
2.2 Revised by: CPW	Clear Trash Racks of Debris	CPW	<p>Goal in PY14: Inspect and clear if necessary hydraulic bottlenecks twice a year</p> <p>Goal in PY15: Continue activity</p>	<p>Planned Activity: Continue cleaning debris from the racks before forecasted heavy storms.</p> <p>Status: Completed. See Attachment 1.</p>	<p>Continue activity</p> <p>Schedule attached for 2016</p>

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
3.1 Revised by: Engineering & GIS Coordinator	Mapping	Engineering & GIS Coordinator	<p>Goal in PY14: Update GIS map as necessary based on findings from the outfall inventory for Phase 3 of the IDDE program.</p> <p>Goal in PY15: Continue activity</p>	<p>Planned Activity: Update GIS map as necessary based on findings from the outfall inventory for Phase 3 of the IDDE program.</p> <p>Status: A total of forty outfalls have been inventoried and uploaded to the City's GIS as part of Phase 3.</p>	Update GIS Mapping as necessary. Integrate Lidar survey data into GIS database and continue updating city owned drainage structure inventory and also GPS locate and map drainage utilities and on-site drainage control structures located on private property. Continue development of web based mapping system showing the location and configuration of drainage utilities.
3.2 Revised by: Engineering & Law Department	Illicit Discharge Ordinance	Engineering & Law Department	<p>Goal in PY14: Implementation of Rules & Regulations in new projects upon approval by the Mayor and the City Council</p> <p>Goal in PY15: Implementation of Rules & Regulations in new projects upon approval by the City Council.</p>	<p>Planned Activity: Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council</p> <p>Status: Initial draft Rules and Regulations were modified to only affect developments of one acre or more after review by the Law Dept. Final draft version is complete and was sent to Mayor for review and approval and then her subsequent submittal to the City Council for approval.</p>	Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council

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
3.3 Revised by: Engineering	Illicit Discharge Detection and Elimination Program	Engineering	<p>Goal in PY14: Sample all IDDE Phase 3 outfalls (25 approx.) and include them in the outfall ranking list</p> <p>Investigate most polluting outfalls and respective catchment areas up to 50 junction manholes.</p> <p>Eliminate identified sources of illicit flows</p> <p>Goal in PY15: Continue the implementation of the IDDE Program</p>	<p>Planned Activity: Sample outfalls in Clematis Masters, and Sibley Brook (Phase 3 outfalls).</p> <p>Status: See Attachment 3 for details of the activities on-going, completed and planned for PY14.</p> <p>Design of remediation work package is complete and will be bid in 2017.</p> <p>Planned Activity: Adopt mitigation and corrective measures whenever new illicit connections are identified.</p> <p>Status: After sampling Phase 3 outfalls, the most contaminated outfall areas are being investigated. Remediation measures to remove identified sources of illicit flow are being designed based on the investigation results.</p>	<p>Continue implementation of the IDDE Program.</p> <p>Details of work planned for PY15 (year 2017) is summarized in Attachment 3.</p>

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
3.5 Revised by: CPW and Engineering	Employee Training	CPW & Engineering	<p>Goal in PY14: Perform one training session with participation of CPW and Engineering staff</p> <p>Goal in PY15: Same as PY14</p>	<p>Planned Activity: Continue to provide IDDE and storm water management training to staff members with a direct or indirect role in storm water.</p> <p>Status: Posters on pollution and storm water BMPs in municipal operations have been developed by the Environmental Specialist and CPW and posted in various appropriate areas in municipal buildings as part of the municipal employee storm water and pollution prevention training program</p>	Continue to provide IDDE and storm water quality management training to staff members with a direct or indirect role in storm water. Including, but not limited to, SSO management, first responders, and spill prevention.

4. Construction Site Storm water Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
4.1 Revised by: Engineering & Law Department	Construction Site Runoff Control Ordinance	Engineering & Law Department	Goal in PY14: Send proposed Rules and Regulations to the City Council for promulgation Goal in PY15: Implementation	Planned Activity: Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council Status: Initial draft Rules and Regulations were modified to only affect developments of one acre or more after review by the Law Dept. Final draft version is complete and was sent to Mayor for review and approval and then her subsequent submittal to the City Council for approval.	Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council
4.2 Revised by: Conservation Commission	Conservation Commission Rules & Regulations	Conservation Commission	Goal in PY14: Perform project reviews as needed Goal in PY15: Perform project reviews as needed	Planned Activity: The City of Waltham's Conservation Commission reviews proposed mitigation measures for construction projects and activities located in areas affected by the Massachusetts Wetlands Protection Act. Status: As of 3/31/2017, a total of 23 Notices of Intent (NOI) were submitted and reviewed by the Conservation Commission during PY14.	Continue activity during PY15

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
4.3 Revised by: Engineering, CPW, Bldg. Department	Plan Review Process	Engineering, CPW, Bldg. Department	Goal in PY14: Rules and Regulations are being finalized before approval by the Mayor and the City Council Goal in PY15: Implementation	Planned Activity: Implement review tasks described in the Rules and Regulations upon approval by the Mayor and the City Council Status: Initial draft Rules and Regulations were modified to only affect developments of one acre or more after review by the Law Dept. Final draft version is complete and was sent to Mayor for review and approval and then her subsequent submittal to the City Council for approval.	Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council
4.4 Revised by: Engineering	Large Construction Site Oversight in Sensitive Areas	Engineering	Goal in PY14: Monitor implementation of BMP in large construction sites Goal in PY15: Monitor implementation of BMP in large construction sites	Planned Activity: Monitor reporting of large construction sites in sensitive areas such as 110 Bear Hill Road and former Polaroid site Status: The Engineering Department receives monthly reports from major construction sites and monitors the BMP implementation	Continue to monitor BMP implementation in large construction sites

5. Post-Construction Storm water Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
5.1 Revised by: Engineering & Law Department	Post-construction Rules & Regulations	Engineering & Law Department	Goal in PY14: Implementation of activities described in the Rules and Regulations after promulgation Goal in PY15: Implementation	Planned Activity: Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council Status: Initial draft Rules and Regulations were modified to only affect developments of one acre or more after review by the Law Dept. Final draft version is complete and was sent to Mayor for review and approval and then her subsequent submittal to the City Council for approval.	Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council
5.2 Revised by: Engineering	Enhancement of Engineering Design Guidelines	Engineering	Goal in PY14: Same as PY9 Goal in PY15: Same as PY9	Planned Activity: Same as PY9 Status: The proposed Rules and Regulations require on-site treatment of storm water in newly paved areas of one acre or more.	Enhance Design Guidelines to meet additional requirements of the new NPDES Phase II Small MS4 General Permit.

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
5.3 Revised by: Engineering and GIS Coordinator	BMP Monitoring & Maintenance Plan	Engineering and GIS Coordinator	Goal in PY14: Same as PY9 Goal in PY15: Start implementing post- construction requirements upon approval of the proposed Rules and Regulations by the Mayor and the City Council.	Planned Activity: Implementation of proposed Rules and Regulations upon approval by the Mayor and the City Council Status: Initial draft Rules and Regulations were modified to only affect developments of one acre or more after review by the Law Dept. Final draft version is complete and was sent to Mayor for review and approval and then her subsequent submittal to the City Council for approval.	Request a long-term O&M Plan for privately operated storm water structures as part of the site-plan review process after approval of the proposed Rules & Regulations. Continue to update the City’s GIS system with private storm water management structures.
5.4 Revised by: Engineering	Develop Long-Term O&M Requirements	Engineering	Goal in PY14: On hold Goal in PY15: On hold	Planned Activity: Develop O&M requirements for storm water infrastructure draining into the public conveyance system Status: This task is on hold until the new NPDES Permit requirements are clearly defined.	This task is on hold until the new NPDES Permit requirements are clearly defined.

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s)– Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
6.1 Revised by: Engineering	Catch Basin Cleaning	Engineering	Goal in PY14: Continue maintenance and sediment monitoring Goal in PY15: Continue maintenance and sediment monitoring	Planned Activity: Continue maintenance and sediment monitoring Status: Catch basins were cleaned city-wide during this reporting period, totaling 736 tons of sediment. See Attachment 2.	Continue maintenance and sediment monitoring
6.2 Revised by: Engineering	Storm water Manhole and Pipe Cleaning	Engineering	Goal in PY14: Continue collecting information for prioritization of areas that need to be maintained Goal in PY15: Continue collecting information for prioritization of areas that need to be maintained	Planned Activity: Create a prioritized drain and sanitary sewer cleaning plan. Status: Approx. 500 feet of 30-inch and 60 feet of 18-inch were cleaned and CCTV inspected in April 2016 in Drake Playground and 3 spots repairs (36 feet) were completed. Approx. 1,100 feet of 12-, 15- and 21-inch DI and RCP stormdrain pipes with 3 new catch basins and 9 catch basin hoods were installed May-June 2016 in Weston, Vernon and Cabot Streets to replace old clay pipes installed in 1940s.	Continue regular cleaning of drains and sanitary sewer especially in areas that are more vulnerable and prone to clogging as recorded in the City’s records for stoppages, sanitary overflows as well as other drainage problems due to blockages and accumulation of debris in the pipes. Finalize prioritization strategy.

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
<p>6.3</p> <p>Revised by:</p> <p>CPW and Engineering</p>	<p>Watershed Maintenance Program</p>	<p>CPW and Engineering</p>	<p>Goal in PY14: Perform two watershed maintenance or cleanup activities per year</p> <p>Goal in PY15: Same as PY13</p>	<p>Planned Activity: Continue to perform the annual weed harvesting in collaboration with the Hardy Pond Association.</p> <p>Status: Hardy Pond weed harvesting project was completed in July of 2016 and is scheduled and funded for July 2017.</p> <p>Planned Activity: The Engineering Department and CPW are evaluating the need to perform a comprehensive maintenance and cleaning effort along Chester and Beaver Brooks along with evaluating flood mitigation alternatives.</p> <p>Status: Beaver Brook cleaning and maintenance plan is being developed.</p>	<p>Continue activity</p> <p>Develop a plan to remove sediment and debris from brooks</p>
<p>6.4</p> <p>Revised by:</p> <p>Engineering</p>	<p>BMP Maintenance</p>	<p>Engineering</p>	<p>Goal in PY14: Perform annual inspections and cleaning as needed</p> <p>Goal in PY15: Perform annual inspections and cleaning as needed</p>	<p>Planned Activity: Clean particle separators located near Hardy Pond and various public schools.</p> <p>Status: Stormceptors and particle separators were inspected.</p>	<p>Perform annual inspections and cleaning as needed</p>

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
<p>6.5</p> <p>Revised by:</p> <p>CPW, Engineering and Environmental Specialist</p>	<p>City Yard Drainage Study and Improvements</p>	<p>CPW, Engineering and Environmental Specialist</p>	<p>Goal in PY14: Zero spills to the City Yard's storm water system</p> <p>Goal in PY15: Zero spills to the City Yard's storm water system</p>	<p>Planned Activity: Continue activity</p> <p>Status: Monthly walk- through by the CPW Pollution Prevention (P2) Team have been conducted.</p> <p>There were no spills to report in PY14.</p>	<p>Continue activity</p>
<p>6.6</p> <p>Revised by:</p> <p>CPW & Engineering</p>	<p>O&M Procedures for Municipal Housekeeping Activities and Facilities</p>	<p>CPW & Engineering</p>	<p>Goal in PY14: Develop municipal O&M procedures for buildings and facilities storm water management.</p> <p>Goal in PY15: Begin implementation of the SOP for water management in the City-owned and operated spray parks.</p>	<p>Planned Activity: Develop an SOP for water management in City operated spray parks</p> <p>Status: An SOP for water management in the City-owned and operated spray parks has been developed.</p>	<p>Begin implementation of the SOP for water management in the City-owned and operated spray parks.</p>

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
<p>6.7</p> <p>Revised by:</p> <p>CPW & Environmental Specialist</p>	<p>Revision and update of the Rhodes Municipal Center/CPW yard SWPPP</p>	<p>CPW & Environmental Specialist</p>	<p>Goal in PY14: Update and implement the SWPPP for the City Yard and Rhodes Municipal Center</p> <p>Begin implementation of the training program</p> <p>Goal in PY15: Continue implementation of the SWPPP and the training program</p>	<p>Planned Activity: When revised and approved, CPW will implement a program to train it’s employees in the revised SWPPP and municipal storm water pollution prevention practices</p> <p>Status: The SWPPP has been updated, revised and reviewed by the Environmental Committee and all departments operating at the City Yard and/or Rhodes Municipal Center and is currently being implemented.</p> <p>Posters on pollution and storm water BMPs in municipal operations have been developed by the Environmental Specialist and CPW and posted in various appropriate areas in municipal buildings as part of the municipal employee storm water and pollution prevention training program</p>	<p>Continue to implement SWPPP and training program</p>

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

Not Applicable

7a. Additions

Not Applicable

7b. WLA Assessment

Not Applicable

Part IV. Summary of Information Collected and Analyzed

Please see Part II Self Assessment for the City summary of information collected and analyzed. Summarized below are City's major accomplishments:

IDDE work completed between January 31, 2016 and July 31, 2016 included CCTV inspection and smoke testing; correction of drainage pipeline mapping; design of repairs; completion of Excavation Work Package 1; completion of the South Street illicit connection construction project. Dry weather sampling at two outfalls (Elm Street and South Street) and follow up sampling in junction manholes in 28-A (Elm Street Area) was conducted on March 25, April 7 and May 12, 2016.

IDDE work completed between July 31 and December 31, 2016 included design and construction of repairs at 51 Thornton Road (SIB-7) and at the Waltham Housing Authority (MBN-3). A Trenchless Work Package #2 has been prepared for public bid and construction is scheduled for spring 2017.

To date, approximately 13.5 million gallons per year of polluted flow have been during phase 1 and 2 of the IDDE Program. A total of twenty-one sources of illicit flow have been removed to date.

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, 2016 through March 31, 2017)

Programmatic

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

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	
Storm water management committee established	(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
Shoreline cleaned since beginning of permit coverage	(mi.)	--
Household Hazardous Waste Collection Days	One day per month April through November	
▪ days sponsored **	(#)	8 days
▪ community participation **	(# or %)	--
▪ material collected **	(tons or gal)	--
School curricula implemented	(y/n)	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 Storm water Management					X
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination				X	
▪ Erosion & Sediment Control				X	
▪ Post-Development Storm water Management				X	

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	~200
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	N/A
▪ CADD	(%)	N/A
▪ GIS	(%)	100
Outfalls inspected/screened **	(# or %)	0
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	~200
Illicit discharges identified **	(#)	6 new (IDDE Phase 3)
Illicit discharges identified (Since beginning of permit coverage)	(#)	31
Illicit connections removed **	(#); and (est. gpd)	2 (17,104)
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	21 (10,878)
% of population on sewer	(%)	99.9
% of population on septic systems	(%)	<1

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	2
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100
Site inspections completed **	(# or %)	0
Tickets/Stop work orders issued **	(# or %)	0
Fines collected **	(# and \$)	0
Complaints/concerns received from public **	(#)	0

Post-Development Storm water Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction storm water control	(%)	100
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	N
Low-impact development (LID) practices permitted and encouraged	(y/n)	Y

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	<1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	1
Qty of structures cleaned **	(#)	2,060
Qty. of storm drain cleaned **	(%, LF or mi.)	<1% As Needed
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	---
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill
Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	---
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	---
• Disposal cost**	(\$)	\$37,242
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1
• Vacuum truck(s) owned/leased	(#)	1
• Vacuum trucks specified in contracts	(y/n)	---
• % Structures cleaned with clam shells **	(%)	99% of cleaned catch basins; 1% of cleaned manholes
• % Structures cleaned with vector **	(%)	1% of cleaned catch basins; 99% of cleaned manholes

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	10
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	35-40 Main St, Moody St, Lexington St
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	2,000 lbs
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Vendor
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$40,000
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	N/A
• Disposal cost**	(\$)	\$28,000
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	3
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	0
• % Roads swept with rotary brush sweepers **	%	100
• % Roads swept with vacuum sweepers **	%	0

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	~2,000 lbs
▪ Herbicides	(lbs. or %)	N/A
▪ Pesticides	(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented	(y/n)	Y

	(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	50 10 0 0 0 0 40
Pre-wetting techniques utilized **	(y/n or %)	N
Manual control spreaders used **	(y/n or %)	Y
Zero-velocity spreaders used **	(y/n or %)	N
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/l _n mi. or %)	0
Estimated net reduction or increase in typical year sand application rate **	(±lbs/l _n mi. or %)	0
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100
Storage shed(s) in design or under construction	(y/n or #)	Complete
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	N
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	Y
Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	--

**Attachment 1
Brook Cleaning
2016**

LOCATION	DATE DONE	DEBRIS AMT.	DATE DONE	DEBRIS AMT.
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*** denotes trash rack

Leitha Drive	4/18/2016	Minimal	10/19/2016	Minimal
Copeland Street	4/18/2016	Minimal	10/19/2016	Minimal
Pinevale Road	4/18/2016	Minimal	10/19/2016	Minimal
Greenwood Lane ***	4/18/2016	Minimal	10/19/2016	Minimal
44 Worcester Lane ***	4/18/2016	1/2 Yard	10/19/2016	Minimal
Clark Lane @ Cowassett Lane ***	4/18/2016	Minimal	10/19/2016	Minimal
Bacon St. @ Worcester Lane ***	4/18/2016	1/2 Yard	10/19/2016	Minimal
Bacon St. @ Hollow	4/18/2016	Minimal	10/19/2016	Minimal
Totten Pond Road	4/18/2016	1/2 Yard	10/19/2016	Minimal
Pond End School Lane	4/18/2016	1/2 Yard	10/19/2016	Minimal
Linden Street ***	4/18/2016	1 yard	10/19/2016	Minimal
Winter St. Loop	4/18/2016	Minimal	10/19/2016	Minimal
Upper Main Street	4/18/2016	Minimal	10/19/2016	Minimal
Bow St. (Falzone Field)	4/18/2016	Minimal	10/19/2016	Minimal
Forest St. (Bentley)	4/18/2016	Minimal	10/19/2016	Minimal
Beaver St. @ Rail Road	4/18/2016	Minimal	10/19/2016	Minimal
Prospect Street Park	4/18/2016	1/2 Yard	10/19/2016	Minimal
Waverly Oaks Road	4/18/2016	1/2 Yard	10/19/2016	Minimal
Lexington Street @ Windsor	4/18/2016	Minimal	10/19/2016	Minimal
City Yard	4/18/2016	Minimal	10/19/2016	Minimal
Over 128 (in Hollow)	4/18/2016	Minimal	10/19/2016	Minimal
Trapelo Road (behind park)	4/18/2016	Minimal	10/19/2016	Minimal
Lakeview Housing	4/18/2016	Minimal	10/19/2016	Minimal
Behind #1080 & 1088 Trapelo Rd.	4/18/2016	Minimal	10/19/2016	Minimal
1643 Trapelo Road	4/18/2016	Minimal	10/19/2016	Minimal
136 Lyman Street	4/18/2016	Minimal	10/19/2016	Minimal
Graverson Park	4/18/2016	Minimal	10/19/2016	Minimal
Samosett @ Woodland ***	4/18/2016	1/2 Yard	10/19/2016	Minimal
Hemlock Terrace	4/18/2016	Minimal	10/19/2016	Minimal

Attachment 2
Catch Basin Tailings Disposal History
April 1, 2016 through March 31, 2017

DISPOSAL DATE	QUANTITY (TONS)	UNIT PRICE PER TON	TOTAL PRICE
4/22/2016	143.44	\$ 40.75	\$ 5,845.18
5/20/2016	168.15	\$ 40.75	\$ 6,852.11
6/10/2016	132.82	\$ 40.75	\$ 5,412.42
8/1/2016	132.82	\$ 40.75	\$ 5,412.42
8/26/2016	102.96	\$ 40.75	\$ 4,195.62
9/12/2016	132.92	\$ 40.75	\$ 5,416.49
11/2/2016	35.48	\$ 40.75	\$ 1,445.81
11/3/2016	65.33	\$ 40.75	\$ 2,662.20
TOTALS	913.92		\$ 37,242.25

Attachment 3

IDDE Program Summary City of Waltham, MA Status of Outfall Areas and Illicit Flow Removal

Completed and On-Going Work

Work completed between July 31, 2016 and December 31, 2016 included design and construction of repairs at 51 Thornton Road (SIB-7) and at the Waltham Housing Authority (MBN-3).

IDDE Investigation

The completed investigations during this reporting period include building inspections to determine sewer service lateral connection locations in the Cedarwood Ave area. Additionally, utility plans and sewer service tie cards were retrieved and examined to evaluate the potential illicit connections.

IDDE Work Packages

- Thornton Road (SIB-7)
- Waltham Housing Authority-Dermody Ave (MBN-3)

IDDE Trenchless Work Package 1

A Trenchless Work Package (#1) has been prepared for public bid. Table 1 provides the scope for each area. Root control was added to the scope of work. The bid for this work package is scheduled for spring 2017.

Table 1: Trenchless Repair Work Package 1

Phase 2 - Work Package 3	Trenchless Repair
BB-12; Beal Rd	Drain and sewer manhole liners; Drain CIPP liner
IMC-11; Fuller St / Newton St	Root Control; Sewer CIPP liner; Manhole liners
BB-23; Main St@ Heard & Newton	Sewer CIPP liner
Phase 3 - Work Package 1	
BB-6; Shirley Rd to Manning Rd	Sewer and drain CIPP liner
BB-6; Upton Rd / Brookfield	Root Control; Sewer and drain CIPP liner
BB-14; Canterbury Rd / Candace Ave	Root Control; Sewer CIPP liner
BB-27; Pierce St / River St	Sewer CIPP liner; Drain manhole liner
CL-9; Juniper Hill Rd / Cliff Rd	Drain CIPP liner
MB-6; Irving St / Oak Hill Rd	Cut protruding tap; Complete CCTV of sewer
MBN-3; Dermody Rd / Hansen Rd	<i>N/A</i> - all excavation work under WHA project
SIB-6; Weston St (RTE 20)	<i>N/A</i> - all excavation work separately designed and bid

Work planned for 2017

The attached schematic shows the status of the City's IDDE program in the Masters Brook Watershed. Seven (7) drainage areas have been cleared of illicit connections through dry weather and wet weather sampling. Four (4) areas are currently in the sampling phase, with only Area 28-A (Elm St) under a full IDDE investigation. The three other sampling areas are pending confirmatory sampling. Three (3) areas in the Masters Brook Watershed are pending construction work packages. The remaining construction work is aimed at resolving previous sampling issues in other watersheds. Twelve (12) drainage areas in the Masters Brook Watershed will be sampled as the upstream issues are resolved.

The City has investigation and construction work planned for the remainder of 2017:

Wet Weather Sampling

- Outfall 28-A Elm Street
- Outfall 36 South Street

Dry Weather Sampling

- Outfall 28-A Elm Street
- SIB-7 Cedarwood Ave Area

Trenchless Work Package 1

- BB-6 Shirley Rd to Manning Rd
- BB-6 Upton Rd / Brookfield
- BB-12 Beal Rd
- BB-14 Canterbury Rd/Candace Ave
- BB-27 Pierce St/ River St
- CL-9 Juniper Hill Rd / Cliff Rd
- IMC-11 Fuller St/ Newton St
- MB-6 Oak Hill Rd / Irving St

Long-term sampling work will move from upstream to downstream sub-areas:

Table 2: Sub-areas Pending Wet Weather Sampling after Upstream Sub-area Construction Work

Outfall Sub-Area	Comments
SIB-5	Downstream of SIB-6/7
SIB-4	
SIB-3	
SIB-2	
SIB-1	
MBS-3	
MBS-2	
MBS-1	Downstream of MBN-4/5
MBN-5	
MBN-4	
MBN-3	Downstream of MBN-3
MBN-1	

MB-4	Downstream of MB-4
MB-3	

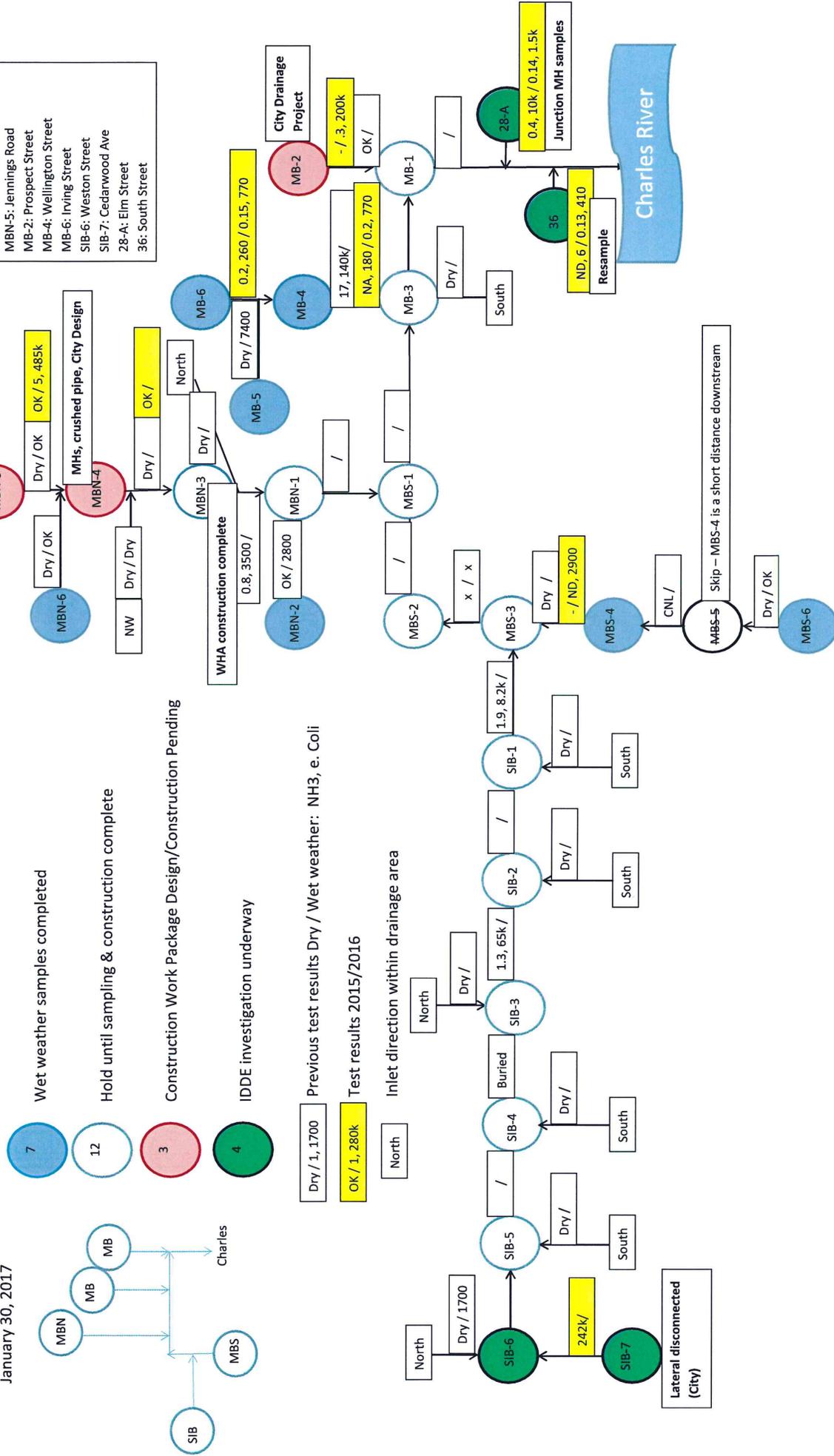
Summary

See attached status schematic for a graphical presentation. The resolution of illicit connections to the drains has moved forward with the completion of the design of Trenchless Work Package 1. The reported illicit connection upstream of the South Street outfall (36) appears to be resolved, pending one more wet weather sample. Sampling continues in junction manholes to identify suspected illicit connections specifically in the Elm Street (Outfall 28-A) area. One illicit connection in the Cedarwood Ave area was removed and one temporary illicit connection upstream of Elm Street was terminated. The City continues to respond quickly to citizen observations and reports of potential illicit connections to the drain system. The next 6-month look-ahead schedule is attached on the following page.

Masters Brook Watershed and Additional Outfalls

IDDE Program Status Schematic

January 30, 2017

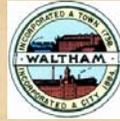


ATTACHMENT 4
Stormwater Workshop - February 1, 2017

Stormwater Workshop
Waltham - Engineering
1 Feb. 2017

SIGN-IN

<u>NAME</u>	<u>DEPT.</u>
Sam Bade	Stormwater Coordinator, SSV ENG.
John Martino	Engineering.
Ian McKenzie	Water / Sewer
Eric Rizzo	IT Services/GIS
Tim Kelly	Water Dept
Pat Azadi	Law Dept.
Sheryl Waddick	EM - Environmental Specialist
BERNIE MULLIN	EM DIRECTOR
BILL FORTE	BUILDING
Mike Garrin	Traffic Engineering
Phil Moser	Conservation
GERALD DUFRENOY -	Conservation
BOB RAFFERTY	ENVIRONMENTAL PARTNERS GROUP
JOE PEDULLA	CITY OF WALTHAM, PURCHAS.
Michael Chiasson	CPW
Bill Doyle -	Core Comm
Catherine Cagle	Planning
Steve Casazza	Engineering



STORMWATER WORKSHOP

PREPARING FOR EPA'S NEW MS4 PERMIT

CITY OF WALTHAM

Engineering Department

Wednesday, February 01, 2017