TOWN OF WELLESLEY
WELLESLEY, MASSACHUSETTS 02481

DAVID J. HICKEY, JR, PE
TOWN ENGINEER

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ASSISTANT TOWN ENGINEER

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DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

May 1, 2015

Mrs. Glenda Velez
U. S. Environmental Protection Agency – Region 1
5 Post Office Square – OEP06-01
Boston, MA 02109-3912

Mr. Fred Civian
Massachusetts Dept. of Environmental Protection
One Winter Street – 5th Floor
Boston, MA 02108

RE: NPDES Phase II Small MS4 General Permit
Annual Report
Wellesley, Massachusetts
EPA NPDES Permit Number: MA 041067
MA DEPT Transmittal Number: W-036293

Dear Mrs. Velez and Mr. Civian:

Please find enclosed herewith a copy of our annual report for the period April 2014 to March 2015 as required by our NPDES Phase II Small MS4 General Permit. The annual report highlights stormwater related activities and tasks performed during the past year.

Should you have any questions or if you require additional information, please feel free to contact me.

Sincerely,

George J. Saraceno
Certified Stormwater Manager

David J. Hickey, Jr., P.E.
Town Engineer

Cc: M. Pakstis, Director
D. Cohen, Assistant Director
H. Larsen, Executive Director
B. Schmitt, Natural Resources Commission

Municipality/Organization: **Town of Wellesley**

EPA NPDES Permit Number: **MA041067**

MassDEP Transmittal Number: **W-036293**

Annual Report Number & Reporting Period: **No. 10 April 1, 2014 – March 31, 2015**

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2015)

Part I. General Information

Contact Person: David J Hickey, P.E. Title: Town Engineer

Telephone #: (781) 235-7600 ex. 3310 Email: dhickey@wellesleyma.gov

Mailing Address: 20 Municipal Way, Wellesley, MA 02481 (formerly 455 Worcester Street)

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: David J Hickey, P.E.

Title: Town Engineer

Date: April 30, 2015

Part II. Self-Assessment

The Town of Wellesley has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions with the following exceptions:

This year our major accomplishment was the initiating a contract for the restoration of the Fuller Brook Park Project. The work includes drain system upgrades, bank stabilization, bio filtration systems, invasive species management, and stream and pond dredging. The project planning and permitting stages occurred over the last eight years and construction will require approximately 4 more years. Planning, permitting and construction costs will exceed $6 million dollars. This Charles River tributary containes about 35% of the land area of Wellesley.

The Town continues to encourage private residential development projects to include stormwater runoff mitigation through on-site infiltration using BMP's and LID techniques. In fact on a year to year basis this is often the largest component of stormwater installations. There were a total of eleven (13) private on-site BMP's installed this year, which continues to grow through public outreach.

Town modestly advanced the dry weather outfall inspections and has undertaken a field proofing of 100% of the drainage network. This year an additional 38 outfalls were inspected. Our experience has been that between 8 and 10% of the network has dry weather flow, however sampling has indicated that it is from natural sources. We continue to operate the storm water hotline and we immediately respond to all reports of possible illicit discharges. We also updated the content of the stormwater management page on the Town's website, which includes information on watershed mapping, stormwater brochure, annual reports, the stormwater hotline and other information pertinent to stormwater.

While we have not yet established erosion and sedimentation control regulations we believe we experience few sediment control problems. Exiting regulations cover all large land disturbances and most importantly protect sensitive regions including water supply zones and wetland resources. The Town will continue to notify builders, architects and engineers of their requirements to provide erosion and sedimentation control measures for site development work. This year staff inspected the installation of BMP's at five (5) site development projects and worked with developers on several smaller residential redevelopments.

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 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permits
1.1	Inform the general public about their role in stormwater management.	Town Engineer/ DPW and Natural Resources Commission	Brochures mailed to every residence by fall 2006.	The Town performed a stormwater presentation for the Town of Wellesley Middle School students and posts stomwater awareness material in several public buildings and on the web site. Storm water education was included in the annual DPW newsletter, mailed to every residence in the spring. Informational meetings on pesticide use and benefits of rain barrels were conducted.	NRC to continue to distribute healthy lawn care and stormwater brochures in public buildings. Continue to provide updates on stormwater management in future DPW newsletters and web pages. The NRC provides links to stormwater management programs on the Town's website.
1.2	Inform residents about catch basin stenciling.	Town Engineer/ DPW	Updates published in newsletter and on website.	Catch basin marking has become a part of 8th grade community service day and Boy Scout Eagle Scout project. Markers are being placed by students. The Town provided maps, training and the materials for the program. This year's electronic forms with mobile devices enabled fields were used to make the project more interesting and effective	Continue program in future years, preferably on an annual basis.

1.3	Continue ongoing pesticide awareness campaign.	Natural Resources Commission	Reach as many residences as possible. Improve the condition of the Town's athletic field turf so that the use of pesticides is reduced or eliminated.	An athletic field natural turf management plan for Town owned playing fields was implemented in 2010. An integrated pesticide management program at Wellesley Country Club (golf course) is ongoing. The NRC distributes updates to the pesticide awareness campaign to landscapers and selected recipients. Integrated Pest Management Policy, Organic Land Management and Implementation Effort.	Continue with outreach program and monitor results. This is primarily done through the Green Wellesley Campaign, both of which are on the Town's website and Facebook page.
1.4	Continue annual household hazardous waste collection day.	DPW Recycling & Disposal Division	Significant amounts of materials collected and number of vehicles entering site.	Annual collection was held on the 3rd Sunday in May, more info is listed in Part V.	Annual collection to continue on or about the first Sunday in May every year.
1.5	Pond Restoration Program - Public Awareness	Town Engineer/ DPW and Natural Resources Commission	Notable reduction of nutrient concentrations in ponds, particularly P and N.	A phosphorus inactivation system for Morse's Pond was installed in 2008 and continues operation through this year. Dredging of Morses Pond was completed in 2013. The dredging project improved detention times and water quality throughout the pond. A independent annual report was made and is posted on the Towns web site. The water quality improvements, particularly over the last few years is very encouraging.	The Town plans to re-bid the Pond management contract. The Town continues to operate under the current Pond management team the phosphorous inactivation system at Morses Pond. State Street Pond will be dredged as part of the Fuller Brook restoration project, and most importantly the Town has appropriated funds to do an assessment of all of the major ponds in the community.
1.6	Brochures mailed to businesses to promote good housekeeping measures at commercial and industrial activities.	Town Engineer/ DPW	Completed in the fall 2006, defer development of additional brochures next general permit..	Deferred until next permit cycle.	The town currently uses its web site to disseminate this information and reduce the use of printed material.
1.7	Continue program to discourage feeding of waterfowl at Town Hall Duck Pond.	Natural Resources Commission and DPW	Reduction in duck population to 8 breeding pairs, reduction of fecal coliform measured in Fuller Brook.	Signs are posted at feeding areas. Due to public awareness, duck population has diminished and remained consistently low. Similar signs are now posted at Longfellow Pond. Installed a rain garden to treat stormwater runoff.	Continue program and periodic monitoring of water quality in Fuller Brook.

1.8	Coordinate with local groups for assistance in outreach.	Natural Resources Commission and DPW	Participation by at least one local group in catch basin stenciling program.	Local citizen's group (Friends of Morse's Pond, Friend of Fuller Brook and Trails Committee) participating in programs to be aware of water quality issues, as well as citizen's group (Wellesley Cancer Prevention Project) participating in pesticide awareness.	Use newsletters, web pages and email blasts to encourage participation by neighborhood groups. Continue outreach.
1.9	Institute a program for pet waste management	Town Engineer/ DPW	Notable Reduction in measured fecal coliform from previous samplings.	Pet waste containers have been placed at public locations and mentioned in annual DPW newsletter.	Continue program with periodic public coverage on web page, newspaper and DPW newsletter.

2. Public Involvement and Participation

BMP ID #	**BMP Description**	**Responsible Dept./Person Name**	**Measurable Goal(s)**	**Progress on Goal(s) – Permit Year 10** (Reliance on non-municipal partners indicated, if any)	**Planned Activities – Future Permits**
2.1	Hold public hearings for new regulations.	Town Engineer/ DPW	BMP COMPLETED		
2.2	Hold public hearings for new site plan bylaw.	Planning Board/ DPW	BMP COMPLETED		
2.3	Seek volunteers for catch basin stenciling program and stream clean up.	Town Engineer/ DPW and NRC	Volunteer groups formed, stream clean up and stenciling in progress.	8th grade students installing markers on an annual basis. Boy Scouts also helping to install markers. Annual stream clean up day along Charles River and Fuller Brook held in April 16, 2014. .	Continue with catch basin marking program and clean up days. The Charles River clean up day was scheduled April 26, 2015. Middle School Public Service Day scheduled for May 6, 2015. 8th graders to again install markers.
2.4	Establish hot line to report illegal dumping.	Department of Public Works.	Number of incidents of illegal dumping being reported.	No illegal dumping to report.	Continue to publicize hotline.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permits
3.1	Develop stormwater system layer on GIS.	Town Engineer/ DPW	Map completed and showing 100% of outfalls.	Field Proofing GIS information, completed inspection and inventorying of network for approximately 65% of the Towns drain system	Continue to field proof drain network and update GIS as required.
3.2	Develop stormwater regulations.	Town Engineer/ DPW	BMP COMPLETED		
3.3	Inspect outfalls, sample and test dry weather discharges.	Town Engineer/ DPW	All 330 outfalls visually inspected by summer 2012.	Continued outfall observation, 38 outfalls inspected with no dry weather flow observed.	Full implementation pending an assessment of resources, DPW is aiming to inspect and sample as many outfalls as possible, however completion will likely require several years or as required with the updated 5 year General Permit.
3.4	Use water quality modeling software to identify priority areas for testing.	Town Engineer/ DPW	Software experimented in 2004 and additional options investigated thereafter		Action delayed until updated 5 year General Permit.
Revised			Delay any purchase until further information is published by the EPA and/or as outlined in the updated 5 year General Permit.		
3.5	Trace identified illicit discharges.	Town Engineer/ DPW	Most illicit discharges eliminated by summer 2007	One (1) illicit connection is an improper inflow (min CB) to the Town's sanitary sewer and the DPW is working with the land owner to get it corrected.	Continue implementation of IDDE in areas of suspected problems, conduct water sampling and follow IDDE policy for correction.
3.6	Establish catch basin stenciling program.	Town Engineer/ DPW		Approximately 188 catch basin markers were placed during 8th grade	Continue Program. Embed cast iron curb markers in new concrete

Revised	Use plastic or cast iron markers instead of stencils.		At least one marker on every street and every 500' on major streets.	community service day and by the Boy Scouts Eagle Scout project.	sidewalk during street reconstruction projects.
3.7	Training for public employees to report illicit discharges.	Town Engineer/ DPW	Public employees observing and reporting illegal dumping.	Refresher training conducted for DPW highway maintenance employees.	Continue ongoing program

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permits
4.1	Develop erosion and sedimentation control measures.	Town Engineer/ DPW	Continue to assess effectiveness and potential to include in next permit phase.	DPW continues to monitor and respond to erosion and sedimentation issues. Conducted 8 site inspections to verify site compliance.	Assess control and effectiveness of existing regulations.
4.2	Require erosion and sedimentation controls in site plan review.	Planning Board	Amendment to zoning bylaw adopted and 100% permitting compliance.	Review of erosion and sedimentation controls is required for most projects including all PSI's, Site Plan reviews and Large House Projects as well as any project within 100' of a wetland or 200' of a river / brook. This covers most projects in the community.	
4.3	Establish procedures for inspections and enforcement of regulations.	Town Engineer/ DPW	Inspections being conducted, achieve 80% compliance rate.	Building inspector and Street Occupancy Permit inspector notifies contractors of erosion and sedimentation control requirements. Inspections and corrections are usually completed by DPW.	SOP for inspections to be established after new permit is adopted. Consider making concrete wash stations a control measure for all project requiring concrete.

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 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permits

5.1	Amend zoning bylaw (Site Plan Review) to address post construction runoff.	Planning Board Zoning Board of Appeals	BMP COMPLETED		
5.2	Monitor inspections and maintenance of privately owned BMP's.	Town Engineer/ DPW/Wetlands Protection Committee/ZBA	Inspection and maintenance of BMP's is performed, town receiving annual reports.	The DPW is tracking the locations of 302 private BMP's (260 residential, 34 commercial and 8 institutional), which are largely infiltration systems, O&M plans are required as part of permitting and DPW staff inspect the installation. Permit conditions require system owners to report on O&M activities.	Include private BMP's on GIS system, continue tracking, installation and requiring owners to perform O&M activities. Consider sending annual reminder letters to system owners.
5.3	Review and approve selected water quality BMP's and supervise installation.	Planning Board	Approved water quality BMP's installed and functioning.	Ongoing under site plan review and Project of Significant Impact review. LID techniques are being encouraged in proposed developments. The NRC obtained funding and permitting for a LID demonstration project consisting of rain barrels and other LID elements. A rain garden was installed, including a pervious sidewalk pavers and pervious stone dust pathway. Thirteen (13) private BMP's were installed this permit period.	Inspection of water quality BMP's are ongoing for the Fuller Brook Preservation project and Morses Pond project.

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 10** (Reliance on non-municipal partners indicated, if any)	**Planned Activities – Future Permits**

6.1	Evaluate existing controls for preventing runoff from municipal operations.	Department of Public Works	Storage facilities constructed and employees trained in spill prevention.	BMP's have been included in all re-development or new building projects including at new W/S building, DPW Operations building, a new High School and redevelopment at the transfer station, in all cases employees were educated about benefits and trained on function and maintenance of several Town owned facilities.	Continue to implement recommendations from SWPPP and expand use of BMP's where appropriate. SWPPP's are reviewed annually for updates. MSGP requires review of stormwater runoff update of SWPP if needed.
6.2	Conduct employee training for hazardous materials, vehicle refueling and washing, and preventative maintenance.	Department of Public Works	100% attendance by DPW employees.	Right to Know training was conducted for DPW employees. Training for vehicle refueling, washing, and preventative maintenance for new Highway Division employees was conducted.	Schedule video training for vehicle refueling, washing, and preventative maintenance for Highway Division employees.
6.3	Remove aquatic weeds from Morses Pond and expand where possible to other ponds.	Department of Public Works and Natural Resources Commission	Visual observation of reduction in invasive and nuisance aquatic weeds.	Mechanical weed harvesting conducted at Morse's Pond and Longfellow Ponds.	Continue program, plan and budget for dredging of Read's Pond fore bay.
6.4	Dredge and remove silt, organic sediments and aquatic weeds from selected ponds.	Department of Public Works and Natural Resources Commission	Reduction in nutrients and elimination of algal blooms and fish kills.	Weed harvesting was conducted on a routine basis and dredging of Morses Pond is complete including beach nourishment. Skate Pond is scheduled to be dredged this year.	Continue weed harvesting and a feasibility studies for two more ponds to be conducted.
6.5	Conduct training in spill prevention procedures and conduct annual deployment exercise.	Department of Public Works and Fire Department.	All spill response personnel are trained and have participated in at least one deployment exercise.	Spill response training video presentations are conducted annually.	Continue annual training and schedule deployment exercise. SPCC manuals are updated when a spill occurs.
6.6	Construct vehicle washing facility at the DPW highway yard.	Department of Public Works	BMP COMPLETED		

6.7	Conduct training for Park & Tree workers on reduced pesticide use.	Department of Public Works and Pesticide Awareness Coordinator (NRC)	Workers are trained and toxic chemicals are not being detected in water bodies.	The Town has in place an Integrated Management Plan for all outdoor public spaces. The IMP prohibits the use of pesticides, excepting limited and specific applications such as winter moth or rodent control. The DPW employs 12 MA certified licensed pesticide applicators who have satisfied the annual training requirements of the state.	Continue compliance with MA license requirement and the Wellesley IMP.
6.8	Review procedures for handling and storage of hazardous materials.	Department of Public Works	Minimize exposure of hazardous materials to stormwater.	Right to Know, Hazardous Waste Handling, Asbestos Management and SPCC training was conducted for most DPW employees.	Continue training programs.
6.9	Conduct training for DPW employees on new construction and land disturbance.	Department of Public Works	Training is conducted every other year. 100% attendance by DPW employees.	Informal training conducted on use of erosion and sedimentation controls.	Ongoing as determined by supervisors.
6.10	Continue ongoing program to clean catch basins.	Department of Public Works	Clean critical catch basins annually, others when 60% full.	162 catch basins cleaning this permit period. Material is being transported to landfill to use as a cover.	Continue with catch basin cleaning program.
6.11	Continue ongoing program for street sweeping.	Department of Public Works	Sweep commercial areas weekly, residential streets annually.	Street sweeping the roads town wide once a year. Commercial areas are swept several times per year.	Continue with street sweeping program.
6.12	Review and revise schedules for municipal maintenance activities.	Department of Public Works	Revised schedules have improved efficiency of operations.	Maintenance SOP's are completed and will be reviewed and revised as necessary.	Continue with program. Plan will be revised as needed.
6.13	Inventory, inspect and maintain town owned structural controls.	Department of Public Works	Volume of material being removed.	The Town continues to inspect all Town owned structural controls and clean when necessary.	Continue periodic inspection and cleaning.
6.14	Evaluate public sites for retrofitting of LID techniques.	NRC Pond manager	Improved quality of runoff in watershed. Design and install one facility per year.	The Town installed 1 LID application including permeable pavement and rain garden.	Continue to pursue LID applications at any substantially remodeled or renovated Town facility.

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

A TMDL HAS BEEN ESTABLISHED FOR THE CHARLES RIVER WATERSHED FOR PATHOGENS

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permits
7.1	Monitor Mass. DEP web site for 303D list, draft TMDL's and final TMDL's.	Town Engineer	The Town is aware of its requirements under the TMDL report and has established BMP's for meeting the WLA.	Ongoing, Mass.DEP has established a TMDL for pathogens. MassDEP has established a TMDL for nutrients for upper/middle Charles River watershed. MassDEP has established a TMDL for phosphorus for the lower Charles River watershed	Promote organic and zero phosphorus fertilizers.
7.2	Perform analytical testing for e-coli at various outfalls.	Town Engineer	WLA are not being exceeded.	The Town did not perform any ecoli testing at outfalls as no dry weather flows were observed.	Program to be expanded during next general permit.
7.3	Continue T.V. inspection of sanitary sewer system.	DPW Water & Sewer Division	100% inspection of system by 2014, all leaks repaired.	77 % of system now inspected or approximately 92 miles of sanitary sewer. Approximately 1,800 linear feet of sewer pipe was tested and sealed.	Inspect 10% per year until completion.

A TMDL HAS BEEN ESTABLISHED FOR THE LOWER CHARLES RIVER WATERSHED FOR PHOSPHORUS.
A TMDL HAS BEEN ESTASBLISHED FOR NUTRIENTS FOR THE UPPER/MIDDLE CHARLES RIVER WATERSHED.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Future Permits
7.4	Install and operate phosphorus inactivation system in Morses Pond.	Town Engineer/ DPW and Natural Resources Commission	Notable reduction of nutrient concentrations in ponds, particularly P and N.	A phosphorus inactivation system for Morses Pond was installed in 2008 and continued operation through this year. The results have been encouraging particularly over the last few years. An annual report is posted on the Town's web site.	The Town plans to bid the Morses Pond management Plan project, including operating the phosphorus inactivation system this summer.

7.5	Promote proper lawn and garden care to reduce the use of pesticides and fertilizers	Town Engineer/ DPW and Natural Resources Commission	Notable reduction of nutrient concentrations in ponds, particularly P and N.	NRC continues to promote Wellesley's Green Campaign, with information on the Town's website and Facebook page.	NRC to continue to distribute healthy lawn care and stormwater brochures in public buildings.
7.6	Evaluate public sites for retrofitting of LID techniques.	NRC Pond manager	Improved quality of runoff in watershed. Design and install one facility per year.	One new rain gardens to be installed this year, including pervious sidewalk pavers and pervious stone dust path surface.	Design and install bio-filtration swale or rain garden at additional sites, continue to promote LID technology.

7b. WLA Assessment

1. Pathogens

The 2012 303(d) list identifies two waterbodies within the jurisdiction of the Town of Wellesley that are impaired by pathogens, specifically e-coli. Portions of a segment of the Charles River, MA 72-07, form the boundary between Wellesley and several other towns. Fuller Brook, MA72-18, has headwaters in Needham, but its confluence with Waban Brook is in Wellesley about 250' yards upstream from the Charles River at mile 40.

Based on the guidance provided in Section 5 of the TMDL, the town has focused on stormwater runoff, leaking sewer pipes, illicit sanitary sewer connections, pet waste and waterfowl contamination as potential sources of pathogens. Due to the urbanized nature of the Town, failing septic systems and agriculture are not considered to be significant sources of pathogens. There are no known CSOs nor are there any wastewater treatments plants operating within the Town. The Town has completed about 77% of a program to inspect its sanitary sewer system and repair leaking pipes and manholes. The Town responded to storm caused sanitary sewer overflows during this permit period, which were immediately cleaned up and included sampling of adjacent streams. Pet waste is being addressed in BMP 1.9. It is suspected that pet waste is a significant cause of pathogens in storm water runoff. The Town is considering providing more pet waste containers and increase public awareness of the problem.

Waterfowl has been identified as the primary source of bacterial impairment in Fuller Brook. To this end, the town has taken steps to improve the water quality at the Town Hall Duck Pond by removing sediment, increasing flow through the stagnated basins of the pond and reducing the duck population and added 4 rain gardens this year. See BMP 1.7.

The Town has hired a contractor to restore and preserve Fuller Brook Park by removing sediment in the stream bed, improving the

stream course, embankment, constructing wetlands, dredging and installing bio-filtration systems and stormwater drainage flow to the brook, which will improve water quality.

2. Nutrients and Phosphorus

The 2012 303(d) list identifies four waterbodies within the jurisdiction of the Town of Wellesley that are impaired by nutrients or phosphorus. Portions of two segments of the Charles River, MA 72-06 and MA 72-07, form the boundary between Wellesley and several other towns. Fuller Brook, MA72-18, has headwaters in Needham, but its confluence with Waban Brook is in Wellesley about 250' yards upstream from the Charles River at mile 40. Rosemary Brook, MA72-25, flows from Needham through Wellesley and empties into the Charles River at mile 60. Most of the portions of Rosemary Brook within Wellesley are within a water supply area and are protected by Town forest and water works land.

The TMDL for the Upper/Middle Charles River watershed recommends reducing phosphorus loadings by employing LID techniques, proper lawn and garden care, and proper disposal of pet waste. Two rain gardens are planned at a site currently under development and the NRC will continue to investigate additional rain gardens or other LID installations. (see BMP 6.14) There is an active rain garden program that encourages private property owners to adopt similar techniques. The Town encourages reductions in the use of fertilizers and pesticides through various public awareness programs that were conducted in 2014. An athletic field natural turf management plan was developed by a consultant in October 2009 and implemented in 2010. The purpose of the plan is to improve the condition of the Town's playing fields so that the use of fertilizers and pesticides is reduced or eliminated. As stated above, pet waste is being addressed in BMP 1.9.

Since 2008, a phosphorus inactivation system is in use at Morses Pond. Although the purpose of this system is to control the growth of algae within the pond itself, Morses Pond is a tributary of the Charles River through Waban Brook, MA72-17. In this manner, the phosphorus inactivation system also provides treatment to the stormwaters that discharge to the Charles River.

The Town is in the construction stage of a Fuller Brook Park Preservation project that will be installing wetland medows and bio-filtration systems this year. Progress is being closely tracked and modifications and improvements will be implemented as required.

Part IV. Summary of Information Collected and Analyzed

Thirty five (38) outfalls were inspected this permit period as part of the Lake Waban watershed. The Town will continue inspecting outfalls during dry weather conditions. During our inspections, there was no dry weather flows observed. The Town continues to implement the IDDE program as dry weather flows are discovered. The Town continues to monitor two (2) outfalls at the Recycling Disposal Facility (RDF) as part of the EPA Multi-Sector General Permit (MSGP).

The Town continues to perform field inspections of outfalls, catch basins and manholes as part of the stormwater drainage system to remove sediments and update the GIS system.

There was no additional activity under this program as there were no further observations or reports of pollutants in the Town's drainage system or waterbodies.

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, 2014 through March 31, 2015)

Education, Involvement, and Training

	(Preferred Units)	Response
Household Hazardous Waste Collection Days		
▪ days sponsored**	(#)	1
▪ community participation**	(# or %)	3.2%
▪ material collected**	(tons or gal)	20 tons
Waste oil collected FY15		13 tons
Hazardous material collected FY15		115 tons
School curricula implemented	(y/n)	no
Catch basin markers placed	(#)	188

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
▪ Erosion & Sediment Control			x	
▪ Post-Development Stormwater Management				x

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	330
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	100
▪ CADD	(%)	0
▪ GIS	(%)	100
Outfalls inspected/screened ** (including in waterways)	(# or %)	38
Outfalls inspected/screened (Since beginning of permit coverage) (includes waterways and retesting)	(# or %)	88
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	9
Illicit connections removed **	(%); est.gpd	0
Illicit connections removed (Since beginning of permit coverage)	(%); est.gpd	2; 50 gpd
% of population on sewer	(%)	97%
% of population on septic systems	(%)	3%

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	90%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	yes
Low-impact development (LID) practices permitted and encouraged	(y/n)	yes

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	Every 2 years
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	Every year
Qty of structures cleaned **	(#)	252
Qty. of storm drain cleaned **	(l.f.)	8,298 l.f.
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	1,395 c.y.
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Crapo Hill Landfill

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	($)	$25,500
• Hourly or per basin contract rate **	($/hr or $ per basin)	$25.50 per basin
• Disposal cost** **(Amount includes truck fee and disposal)**	($)	$30.00/ton
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1 owned
• Vacuum truck(s) owned/leased	(#)	1 owned
• Vacuum trucks specified in contracts	(y/n)	n/a
• % Structures cleaned with clam shells **	(%)	75%
• % Structures cleaned with vactor **	(%)	25%

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	Wkly= 12+/-
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	1,376 c.y.
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	($)	$25,000

• Hourly or lane mile contract rate **	($/hr. or ln. mi.)	$63/ ln. mi.
• Disposal cost** **(Amount includes truck fee and disposal)**	($)	$30.00/ton
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	2 owned
• Vacuum street sweepers owned/leased	(#)	none
• Vacuum street sweepers specified in contracts	(y/n)	n/a
• % Roads swept with rotary brush sweepers **	%	100%
• % Roads swept with vacuum sweepers **	%	0%
Number of municipal oil-water separators cleaned.		2
Tons of sludge and sediment removed		4
Gallons of oily water removed		0

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	10%
▪ Herbicides	(lbs. or %)	0
▪ Pesticides	(lbs. or %)	0
Integrated Pest Management (IPM) Practices Implemented	(y/n)	yes

Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas) Calcium Chloride 37% - 39% $CaCl_2$ Solution		
Pre-wetting techniques utilized **	(y/n or #)	yes
Manual control spreaders used **	(y/n or #)	yes
Zero-velocity spreaders used **	(y/n or #)	no
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	indeterminate
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	indeterminate
% of salt/chemical pile(s) covered in storage shed. Some mixed sand/salt stored outside under cover.	(%)	100% covered

Storage shed(s) in design or under construction	(y/n or #)	In use
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	yes

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	no
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	no
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	no