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**Municipality/Organization:** Lexington

**EPA NPDES Permit Number:** MAR041042

**MaDEP Transmittal Number:** \_\_\_\_\_

**Annual Report Number  
& Reporting Period:** No. 8 April 1 2010 to March 2011

## NPDES Phase II Small MS4 General Permit Annual Report

### Part I. General Information

**Contact Person:** Carl F. Valente **Title:** Town Manager

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Lexington, MA 02420

#### 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:** Carl F. Valente

**Printed Name:** Carl F. Valente

**Title:** Town Manager

**Date:** 4/28/2011

## **Part II. Self-Assessment**

The Town of Lexington made progress with minimum control measures described in our permit in year 8 of the permit. Noteworthy progress was made with public involvement and employee training. We used volunteer effort to write an article for an online newspaper. A second article was written based on an interview with a volunteer about storm drain markers. The town was successful in year 8 with involving volunteers with stormwater stream sampling which provided the Town with useful stream water quality data and educated the public on clean water goals. Town staff members from the engineering and conservation departments are working with the Mystic River Watershed Association. This relationship has brought about the sharing of information on municipal asset management and volunteer involvement with stream sampling. The town staff used opportunities presented by EPA with material available through EPA's web site.

**Part III. Summary of Minimum Control Measures**

**1. Public Education and Outreach**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)</b>	<b>Planned Activities – Permit Year 9</b>
1A	Classroom Education	Conservation/ E. Schadler	Design and present elementary-school level session explaining stormwater system	Supported Lexington Montessori School in their stream survey project: met with students to discuss impacts of stormwater runoff. November 16, 2010 - 10 Students submitted 7 page stream survey reports to Town Staff.	Continue education program with schools.
	Classroom Education	Conservation/ E. Schadler	Design and present elementary-school level session explaining stormwater system	“The Water Cycle” is part of the 3 <sup>rd</sup> grade curriculum in the Lexington Public elementary schools. This is a teacher’s guide developed by Town Conservation field environmentalist.	Support use of the curriculum and keep it current.
	Classroom Education	Engineering/ Engineering / J. Livsey, D. Pavlik and T. Malatesta Water Department R. Fullford	Design and present elementary-school level session explaining stormwater system	August 25, 2010 - Presented stormwater demonstration to elementary school students during DPW facility tour. Purchased EnviroScape Stormwater Model to be used for education for students.	Present stormwater demonstration to elementary school students at open house. Continue stormwater education during DPW classroom tours of stormwater BMP’s installed at LEED certified facility.
1B	Create and Maintain Stormwater Web Site	Engineering/ Dave Pavlik	Maintained and updated stormwater web page	Posted stream study workshops and ongoing stormwater activities. Received emails from stakeholders pertaining to stormwater.	Create distribution email lists from stormwater workshop for stakeholders.

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1C	Household hazardous waste collection days	DPW/ R. Beaudoin	Published brochure with Recycling and Disposal Guidelines describing hazardous household waste products publishing hazardous waste drop dates and times A stormwater information leaflet inserted into water bills. Pamphlets offered at DPW/Engineering Kiosks. Education material distributed during DPW facility tour.	Completed 8 drop collection days at DPW Recycling Facility.	Continue program as budget allows.
1D	Education Pamphlets	Engineering / D. Pavlik Conservation/ E. Schadler Engineering / J. Livsey	A stormwater information leaflet inserted into water bills. Pamphlets offered at DPW/Engineering Kiosks. Education material distributed during DPW facility tour.	Water bill insert explained how individuals can reduce stormwater runoff pollutions; it also explained the three different watersheds located in Lexington. Pamphlet at Kiosks: EPA – “Protecting Water Quality from Urban Runoff” Stormwater Matters “Stormwater where does it go?” Distributed EPA’s handout “Thirstin’s Water Cycle Adventure” during DPW facility tour.	Place and maintain leaflets in public kiosks.  Continue handouts during DPW facility tours and at national public works week DPW open house.

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1E	Make use of available media to disseminate information on stormwater	Conservation/ E. Schadler Engineering/ D. Pavlik	Stormwater volunteer stewards and Town staff write and publish stream and watershed articles Town staff generated posters for display in town buildings and postcards for direct mailings.	October 11, 2010 -Article on protecting our local streams was published in Lexington Minuteman newspaper. It was written by watershed steward Carolyn Levi. September 21, 2010 -Article on storm drain markers written with interview with watershed steward Stew Kennedy. Two separate September 23, 2010 and March 17, 2011 -Stream management workshop newspaper articles were published in local newspaper. – March 9, 2011-175 postcards were mailed to residents that about Lexington streams. Four posters were placed in Town buildings by town staff.	For the next year run 2 articles in Minuteman newspaper to publicize stormwater events. Run two on line newspaper articles on progress of storm drain marker installation.
1F	Newsletter for watershed stewards program	Conservation/ E. Schadler	Publish newsletter biennially.	Fall 2010 newsletter article on storm drain markers detailing who is involved with the project for town staff and specifically which volunteers are involved in placement of storm drains. Newsletter also included need for more volunteer involvement. Article in newspaper about Lexington Conservation department working with Lexington Montessori School on mapping and scientific environmental field work.	Continue to recruit new volunteers for next phase of storm drain markers with articles in newsletter. Continue to publish articles to stimulate student involvement and education.

## 2 Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
2A	Stream Cleanup Day	Conservation/ E. Schadler Engineering/ D. Pavlik	Annual stream cleanup days	Stream stewards worked periodically throughout three seasons to clean assigned streams	Continue regular cleanups
Revised 2010	Public Involvement			Stream cleanup days are now an activity of Lexington Watershed Stewards. This BMP is being renamed to more accurately describe the scope of activities that include all interested citizens.	
2A Cont.	Public Involvement	Conservation/ E. Schadler Engineering/ D. Pavlik	Maintained and increased watershed directors program. Group of volunteers and town staff that direct and organize watershed events and activities.	Town Conservation and Engineering Staff maintained monthly meetings with Watershed Stewards to plan and organize program activities. Created sub committees and sub groups to handle specific watershed and stormwater management tasks. Two new permanent watershed directors joined group and attend all watershed directors meeting.	Continue watershed directors meetings and organize activities through the volunteer directors.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
	Public Involvement	Conservation/ E. Schadler Engineering/ D. Pavlik	<p>Volunteer projects.</p> <p>1) Stream survey of Lexington streams – May 9, 2010.</p> <p>2) Installation of storm drain markers town wide.</p> <p>3) Volunteer involvement in stream sampling for water quality.</p>	<p>May 9, 2010 – 25 Volunteers worked on stream survey investigating overall stream health and were directed to look for any piping into streams and brooks. Successfully transferred stream survey data into engineering GIS database. Planned for April 2011 - storm drain markers installation; planning for it has taken place via volunteer and staff meetings throughout 2010. Markers and tools were purchased in February 2011. Proposal and location map were generated by volunteers and staff. March 29, 2011 - Staff and volunteers sampled streams for lab analysis. Refer to BMP 3D.</p>	<p>Conduct volunteer stream survey day in Shawseen watershed planned for April 2011. Continue to integrate watershed survey data from volunteers with Town GIS data. Install storm drain markers later April or early May 2011. Plan and determine locations of phase II storm drain markers. Continue to educate and involve volunteers on water quality sampling in town streams. Continue work with Mystic River Watershed Association and Cambridge water department in educating volunteers for water quality sampling.</p>
	Public Involvement	Conservation/ E. Schadler	<p>Volunteers wrote and publish articles on stormwater and Lexington streams.</p>	<p>Watershed steward director wrote article online article on Protecting our local streams. Watershed steward director was interviewed for article on storm drain markers. Volunteers contributed to articles published in Lexington Conservation Stewards newsletter.</p>	<p>Town to continue work with volunteers on providing information on Town stream habitat and Town's drainage systems.</p>
2B	Water quality monitoring Old Res	Recreation Dept/ Karen Simmons	<p>Sanitary survey of drain outlets into Old Res Recreation Area.</p>	<p>This water body is tested for bacteria daily by the Health Department. In season the Old Res is a public swimming pond.</p>	<p>Continue sampling and reporting.</p>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
2C	Stream Neighbor Notices	Conservation/ E. Schadler Engineering/ D. Pavlik	Inform brook abutters of stream surveys.	April 26 2010 – Letters were mailed to brook abutters to inform them of the volunteer work day planned for May 9, 2010. Stream abutters are notified by means of the Stream Stewards network. They live in the streamsheds neighborhoods and use all available media to generate interest.	Will inform stream abutters when opportunity presents.
2D	Septic Systems Tracking Management	Health Dept/ K. Fox	Transfer data to electronic media, maintain and upgrade data	Maintained database.	Maintain the database



### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3A	Locate and map outfalls	Engineering/ D. Pavlik	Installed ArcMap for engineering staff to begin GIS education on outfall and watershed mapping. Four staff sessions with MIS and conservation educating engineering staff on using GIS for outfall and watershed mapping.	Improved outfall mapping by integrating GIS layers for Towns streamsheds to show location of outfalls. Generated specific outfall labels in GIS unique to each outfall. Edited outfall labels and generated database tables with outfall GIS position and attributes. Worked with consulting scientists to inspect outfalls located in Charles River watershed. Integrated outfall GIS information from volunteer's survey from Shawsheen River Watershed. MIS department purchased GPS antenna to be used with current GPS unit to assist with data collection under heavy tree canopy.	Continue to edit and improve labeling on outfall maps. Continue to train engineering staff on GIS. Integrate information from consultant's GIS data on outfalls in Charles River Watershed. Study the Shawsheen River watershed and integrate all GIS information from the study. Use hand held GPS and antenna to collect data.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3B	DPW Employee Education	Engineering/ D. Pavlik	Education of Town staff on development of Illicit Discharge Detection and Elimination program. Obtained information education guidance manual.	Town staff from engineering and conservation had meetings with Mystic River Watershed Association discussing setting up sampling programs for stream sampling for illicit discharge and stream quality. Meetings followed up with phone conversations on what type of equipment would be helpful in and IDDE program. Engineering staff obtained guidance manual on Illicit Discharge Detection and Elimination published by Center of Watershed Protection. Staff has read sections on developing IDDE program and hot spot location and monitoring. Staff has researched what tools and technology is available to purchase to develop Town's IDDE program.	Continue to receive EPA's NPDES emails as provided. Continue to meet with Watershed Associations and attend EPA training. Signed up for July 13, 2011 Webcast presented by Center for Watershed Protection. Engineering staff is on EPA's NPDES email distribution
3C	Stormwater Bylaw	Conservation/ K. Mullins Engineering/ J. Livsey	Implement stormwater bylaw.	Bylaw was passed by Town Meeting in 2008. Bylaw prohibits non-stormwater discharges and pollutants into the MS4 or watercourses in the town and it includes enforcement methods.	Work with town staff and user groups to continue administration of the bylaw.
3D	Illicit Discharge Recording System	Engineering/ M. Flamang	Record known points of illicit discharge	Maintain data base of points of illicit discharge and sample locations used to investigate.	Maintain the database and add points of discharge, sample locations and sample results.
3E	Locate and remediate potential sources of pollution	Engineering/ J Livsey	Direct the work of and engineering/design consultant in comprehensive plan to repair sanitary sewers.	Weston and Sampson Engineers has been working continuously since 2009 and at a high level to clean, survey and repair sewers to stop exfiltration of sewage into streams during wet weather. This work is expected to also disclose points of illicit discharges.	Continue work on program of comprehensive sanitary sewer repair and renewal.

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	Locate and remediate potential sources of pollution	Engineering/ M. Flamang	Locate and remove illicit connections to storm drains for approximately 10% of town.	Weston and Sampson completed house to house sewer integrity check in portions of Basins 6, 7 and 10.	Take next steps to remove storm drain connections to sanitary sewers.
3E Cont.	Locate and remediate potential sources of pollution	Engineering/ M. Flamang D. Pavlik	Line aging sanitary sewers to prevent exfiltration of sewage into sewer underdrains that flow to streams.	Initiated design of repair and lining project for Vine Brook vicinity.	Complete design and procure construction contractor to complete the repairs.
3E Cont.	Locate and remediate potential sources of pollution	Engineering/ M. Flamang D. Pavlik	Replace aging wastewater system at Town's public bathroom at Center Recreation Fields to eliminate potential for exfiltration to Vine Brook.	Completed design of new sewer service connection to Town's sanitary system.	Procure construction contractor to complete the replacement of the facility sewage system.

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3E Cont.	Locate and remediate potential sources of pollution	Engineering/ M. Flamang and D. Pavlik	Design and carry out stream sampling town-wide to aid in identification of pollution hot spots.	March 29, 2011 - Performed dry weather sampling of five streams at strategic locations.	Continue sampling and investigation to find other illicit connections.
	Locate and remediate potential sources of pollution	Engineering/ J Livsey and Recreation/ K. Simmons	Improve stormwater system in vicinity of Old Res to reduce wet weather contamination.	Completed study of alternatives for treatment of stormwater runoff into Old Res facility. Finalized selection and design of BMP. Town Meeting has approved funding for completion of design and construction. Completed TV inspection of sewers in this streamshed to look for illicit discharges. No illicit connections located in this area.	Secure funding and proceed with design and construction of stormwater treatment for street runoff and other pollution at Old Res.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
	Illicit Discharge Detection and Elimination	Engineering/ D. Pavlik Conservation E. Schadler	Draft of IDDE plan that includes a prioritization of water quality stream sampling using existing information of water quality problem areas and information from abutting communities. Strengthen involvement with local watershed associations to assist Lexington with understand water quality from three different River sheds located within Town's boundary.	Compiled information from EPA on Mystic River and Charles River water quality and attended meeting at EPA on Mystic River municipal sub committee. Town engineering staff viewed Two-hour audio web broadcast from US EPA Stormwater Program's. One webcast on "Developing Your IDDE Program" and one on "Conducting Illicit Discharge Detection and Elimination Investigations".	Continue program. View third web cast from EPA "Illicit Discharge Detection and Elimination IDDE 301 - Finding and Fixing Illicit Discharges and Connections". Strength partnership with and involvement with Mystic River and Charles River watershed Associations.

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
4A	Runoff Control	Conservation/ K. Mullins Engineering/ J. Livsey	Implement stormwater bylaw	Bylaw was passed by Town Meeting in 2008. Bylaw prohibits non-stormwater discharges and pollutants into the MS4 or watercourses in the town and it includes enforcement methods.	Work with town staff and user groups to continue administration of the bylaw.
4A Cont	Runoff Control	Engineering/ J Livsey	Implement stormwater bylaw	Consolidated DPW inspection administration in Engineering Division to insure that all sites are inspected	Manage inspection program to assure complete coverage
4A Cont	Runoff Control	DPW/M Valenti	Issue notices for construction runoff remediation	Highway superintendent and staff have increased monitoring of construction sites and are issuing notices	Continue to monitor and issue notices
4B	Inspection Staff Training	Building/ G. Rhodes Engineering/ J Livsey	Train inspection staff to look for and respond to risky construction site practices	Held joint meetings with engineering, public works and building inspection staff to improve communication between departments with respect to construction site runoff	Continue to hold joint meetings to improve interdepartmental communication
4B Cont	Inspection Staff Training	Building/ G. Rhodes Engineering/ J Livsey	Train inspection staff to look for and respond to risky construction site practices	Inspection staff of community development and engineering departments has been trained and look for construction site erosion.	Update and deliver training to reflect complete stormwater bylaw and regulations.
4C	Inspection and reporting	Engineering/ M. Flamang Conservation/ K. Mullins	Design and distribute handout for permits	During this year, the town staff consistently referred contractors to the EPA construction permit program. Engineering permits have been annotated to require as-builts of privately owned treatment facilities.	Continue to refer applicants for Building Permits to EPA permit program

**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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
5A	Inventory Construction Violations	Engineering/ J Livsey	Inspect all construction sites and record findings	Implemented Envista software project mapping program to track locations and status	Continue use of Envista to manage information and inspection schedules
5B	Develop BMP's list	Engineering/ M. Flamang	Develop list of BMP's that are appropriate for Lexington public and private projects	Staff has studied State DEP Stormwater Handbook. BMP's are described in the Handbook, now State policy.	Finalize stormwater management regulations to work with state policy.
5C	Post Construction Runoff Control	DPW/M Valenti	Issue notices for runoff remediation	Highway superintendent and staff have increased monitoring of sites where construction is complete and are issuing notices	Continue to monitor and issue notices
5D	Runoff Operation and Maintenance Plan	Conservation/ K. Mullins Engineering/ M. Flamang	Require in-house reviewers to screen permit applications for O&M plans	Staff screens permit applications for O&M plans.	Continue to require O&M Plans

### 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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
6A	Employee training	Public Works/ D. Pavlik & D. Pinsonneault	Train DPW managers for Stormwater Manager Certification. Educational talk for Formen from highway division on the NPDES Phase II program. Town staff attended Phosphorus Reduction Workshop. Engineer staff participated in Center for Watershed Protection Webcast.	October 6, 20 and 27, 2010 - Director of Public Works, Town Engineer, Assistant Town Engineer, Senior Civil Engineer and Engineering Assistant attended 3- Two hour web classrooms at DPW facility training room. February 10, 2011 -DPW management and Highway Department Staff attended talk on "Preparing for Phase II Storm Water Regulations What Communities Need to Know". February 17, 2011 - DPW director and Town Engineer attend Phosphorus Reduction Workshop. March 16, 2011 Town Engineer and Engineering Assistant participated in Webcast on Design, Installation, and Maintenance of Constructed Wetlands & Regenerative Stormwater Conveyance Systems.	Three staff members of DPW/Engineering have signed up for EPA training two for April 27 and one for June 3. Three staff members from DPW/Engineering have signed up for 4 additional webcast presented by Center for Watershed Protection.
6B	Municipal pollution prevention	Public Works/ D. Pinsonneault	Schedule street cleaning	Continued DPW street sweeping program. All streets swept twice per year using mechanical broom. More often as needed.	Continue program
6C	Vehicle washing	Public Works/ D. Pinsonneault	Wash indoors to keep solids from stream	Continued DPW vehicle washing program. All vehicles are washed indoors in a facility that recycles wash water.	Continue program



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6D	Used oil recycling	Public Works Operations/ D. Pinsonneault Public Works Solid Waste/ R. Beaudoin	Collect used oil at PW maintenance garage and make used oil recycling available at Town Recycling facility.	Contracted for maintenance garage recycling and offered household waste recycling townwide eight times per year.	Continue program

**7. Best Management Practices for Meeting total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)**

7A	Pet Waste Pollution Prevention	Conservation/ E. Schadler Town Clerk/ D. Hooper	Inform the public on the impact of pet waste on the environment	Distributed leaflet to dog owners when owners purchased dog license. Leaflet seeks to inform owners of the effects of improper waste disposal.	Continue program
7A Cont.	Pet Waste Pollution Prevention	Conservation/ E. Schadler Town Clerk/ D. Hooper	Engage the public to participate in proper disposal of pet waste	Created a "Lexington Green Paw" program. Informs dog owners of proper waste disposal methods and issues a stylish Green Paw tag to dogs when owner commits to dispose of waste properly.	Continue program
7B	Locate and remediate potential sources of pollution	Engineering/ M. Flamang D. Pavlik	Line aging sanitary sewers to prevent exfiltration of sewage into sewer underdrains that flow to streams.	Initiated design of repair and lining project for Vine Brook vicinity.	Complete design and procure construction contractor to complete the repairs.
7B	Stream Restoration	Engineering and Conservation/ J. Livsey and K. Mullins	Develop and Implement a Program of Waterway Maintenance and Restoration	Town has funded for a Stream Restoration Program which includes a study, permitting and program execution.	The effort this year will be to quantify the length and numbers of streams needing restoration and to develop scope for contractors to implement restoration in compliance with applicable regulations.