

**Municipality/Organization:** City of Lowell, Massachusetts  
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**MADEP Transmittal Number:** W-040991  
**Annual Report Number:** No.13  
**Annual Reporting Period:** April 2015-March 2016

## NPDES PII Small MS4 General Permit ANNUAL REPORT

### Part I. General Information

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### **Certification:**

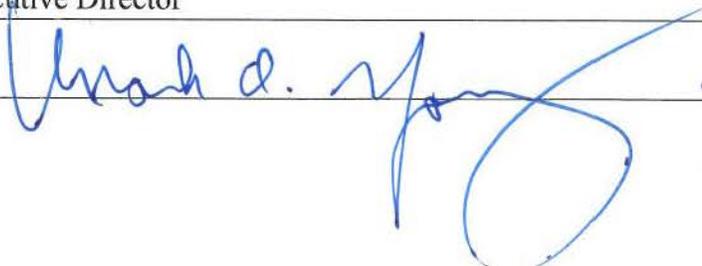
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Signature: \_\_\_\_\_

Printed Name: Mark A. Young  
\_\_\_\_\_

Title: Executive Director  
\_\_\_\_\_

Date: \_\_\_\_\_

 5-2-16

## Part II. Self-Assessment

The City of Lowell has successfully increased stormwater control awareness amongst the public by implementing the following programs: Earth Day activities; hazardous waste collections; pet waste disposal policies; and distribution of stormwater educational materials.

In 2010, the City of Lowell initiated a new drainage outfall identification project. After four years of implementing this program, about 460 outfalls were identified in the field, characterized in an inventory report, and captured in the city's Geographical Information System (GIS). During this time, 84 drainage outfalls showed signs of dry weather flow. These outfalls were analyzed for pH, temperature, E-coli, and Fluoride, and physical characteristics were recorded. Only 31 out of the 84 outfalls were characterized as potential illicit discharges due to high E-coli levels and positive fluoride results. All of the potentially illicit drainage outfalls have been and will continue to be monitored and analyzed on a regular basis. Based on the replicated analysis of each outfall, the results indicated that there are no illicit connections to the public drainage outfalls. The City of Lowell continues to identify new outfalls and monitor existing ones.

Of the dry-weather discharges evaluated, one illicit connection was discovered as a direct sewer discharge into the Concord River. The discharge was traced to an illegal sewer connection; the owner was notified of the illegal connection and required to disconnect the sewer service. Subsequent monitoring has confirmed that this illicit discharge has been re-directed to the public sewer system.

Lowell Regional Wastewater Utility (LRWWU) has begun focusing more on mapping the entire drainage system throughout the City of Lowell. Each drain line is being mapped thoroughly from the start of the drain to the end of the drain at the outfall. LRWWU is obtaining GPS coordinates for all the catch basins, drain manholes, and outfalls. Once one drain line is completely surveyed and mapped, LRWWU moves onto the next drain line and continues this process. Mapping the drainage system has helped locate more outfalls and has also helped to determine which outfalls are active or inactive in a given area.

The City of Lowell inspects construction sites for conformance with city policies for erosion control and site stormwater management. Private development projects are reviewed by city departments for adherence to Massachusetts Stormwater Regulations. Stormwater BMPs for private developments are periodically inspected to ensure proper operation and maintenance.

For many years, the City of Lowell has implemented street sweeping and catch basin cleaning programs to reduce the migration of solids in the city's drainage system. After catch basins are cleaned, the City of Lowell labels the basins and collects vital information such as physical characteristics, GPS points, and all elevations of these catch basins. Maintenance of equipment and facilities are carefully managed in order to minimize the potential for contaminants to enter the drainage system.

The City of Lowell has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.

## 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 Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities –
1.1	Hold annual Earth Day Celebration	Neighborhood Services Department	Event Held	On April 25, 2015, the City of Lowell held an Earth Day Parade and Festival in downtown Lowell that included art, music, and dance. This festival also included arts and crafts for the children to teach them about science and environmental issues, and demonstrations on sustainability issues. Along with the Earth Day Parade and Festival, there are a number of clean up days in various neighborhoods of Lowell	Hold 2016 Celebration.
1.2	Develop and Distribute Stormwater Brochure	Lowell Regional Wastewater Utility	Develop stormwater brochure in Year 1 and distribute in subsequent years	Copies of the previous years stormwater brochure are available to the public at City Hall; DPW; Water Plant; Wastewater Plant; City Clerks Office; City Hall; Public Libraries; Division of Planning & Development; and Neighborhood Services Department.	Continue maintaining copies of the Stormwater Brochure at the public distribution sites as needed.  As a follow up to labeling the catch basins with plaques that say, "No Dumping; Drains to River," LRWWU will place door hangers on the homes of neighborhoods with drainage systems that explain what should and should not be dumped down the catch basins.  LRWWU will begin developing new Stormwater Brochures that will focus on different audiences.
1.3	Enhance Awareness of Proper Pet Waste Disposal at City Parks	City Clerk, Parks Dept.	Pet Waste Brochure developed in Year 2; and distributed to all licensed dog owners in Years 3-5. Pet waste signs to be installed at City Parks in Years 2-5.	The Stormwater Brochure (discussed above) includes educational information on Pet Care. Flyers discussing the Animal Control Ordinance are available at DPW and posted on signs at the City's parks. Lowell maintains approximately 100 signs at City parks posting the Animal Control Ordinance. The City consists of 92 parks all of which contain at least one sign. Signs are posted wherever notable animal waste is present and all are maintained and replaced by the Parks Department.	Continue to maintain supply of Stormwater Brochures.  Coordinate with City Clerks Office to ensure awareness of Animal Control Ordinance.

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities –
2.1	Comply with State Public Notification Guidelines	City Clerk; other City Dept.	Comply with State public notification guidelines	City posted all applicable meetings and environmental awareness events according to state guidelines including local access TV channel.	City to continuing developing website-based meeting notifications.
2.2	Hold Annual Household Hazardous Waste/Tire/Electronics Collection Days	SW&R Office, DPW	Hold hazardous waste collection day semi-annually	Household Hazardous Waste Collection Days were held on May 9, 2015 & September 12, 2015. The events were advertised in the local newspaper, on local access TV, AM Radio, Quarterly Newsletter, and on the City website. During the spring event, a total of 355 residents participated and 389 during the fall event. DPW retains the manifests of the household hazardous waste collected.	Hold 2016 Collection Days
2.3	Install Catch Basin Plaques	Lowell Regional Wastewater Utility	50 catch basin plaques installed each year	<p>The City of Lowell has installed about 150 plaques on catch basins throughout the city. The city has incorporated catch basin characterization into its catch basin cleaning program. Once a catch basin is cleaned, another crew returns to capture location, configuration, and condition.</p> <p>At that time, the catch basin is identified with a plaque that reads <i>“No Dumping; Drains to River.”</i></p>	The City will consider coordination with local groups to assist in the catch basin identification program. At least 50 catch basins will be identified each year.

### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities –
3.1	Map Drain Outfalls and Receiving waters	Lowell Regional Wastewater Utility	Complete map of outfalls and map of drainage system	<p>The City of Lowell initiated a new drainage outfall identification project in 2010. As a result of this effort, about 460 outfalls were identified in the field, characterized in an inventory report, and captured in the city's Geographical Information System (GIS).</p> <p>The city has developed a very efficient program in mapping the entire drainage system of Lowell. LRWWU has dedicated 0.75 of a Full Time Equivalent (FTE) to surveying entire drain lines in Lowell and ensuring that all assets are inspected and mapped.</p>	<p>The City of Lowell will continue to identify and characterize all drainage outfalls within its municipal extents.</p> <p>This data will be used to enhance understanding of the city's drainage outfalls and improve the city's drainage system mapping.</p> <p>The city will continue to collect stormwater data and will update Lowell's drainage system on GIS.</p>
3.2	Continue Inspections of New Sanitary Sewer Connections	City Engineering	Continue existing program	City inspected 146 new/updated sewer connections.	Continue inspections of new sewer connections.
3.3	Continue enforcement of illicit connection/ illegal dumping bylaws	City Engineering & Lowell Regional Wastewater Utility	Continue existing program	City enforced existing bylaws. Illicit connections/illegal dumping addressed as needed by the City. No violations were found.	Continue to enforce illicit connection/illegal dumping bylaws.
3.4	Dry weather screening of drain outfalls	Lowell Regional Wastewater Utility	All outfalls screened once during permit period	<p>A total of 84 drainage outfalls were observed to have a dry-weather flow. Out of the 84 outfalls, 31 of them were flagged as potential illicit discharges during the 2010 to 2016 outfall inspection program. The outfalls were analyzed for pH, E-coli, and Fluoride. Visual and olfactory observations were also recorded for these discharges.</p> <p>All suspect outfalls were monitored and analyzed numerous times to ensure that no illicit connections were connected to public drainage outfalls.</p>	The City of Lowell will continue to monitor drainage outfalls and inspect private sewer system connections to ensure that no illicit connections are made to the city's drainage system.
3.5	Develop and Implement System for Elimination of Illicit Discharges	Lowell Regional Wastewater Utility	Based on prioritized results in BMP No.3.4, determine procedures to identify and remove illicit connections to drain; maintain records	All of the drainage outfalls with dry weather flow are continuously being monitored. The City has identified a total of 31 dry weather flow outfalls which all have been monitored and analyzed for illicit connections. There have been no new illicit connections found.	The City of Lowell will to continue to identify and remove illicit connections. The city will continue to promote education/awareness of potential illicit connection issues.

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities –
4.1	Continue to Apply Standard 8 of MA Stormwater Policy	Conservation Commission	Standard 8 of MSP applied	The City of Lowell's Conservation Commission requires proper stabilization of all sites during construction including, but not limited to, the installation of erosion control measures. Ten (10) projects were reviewed that incorporated stormwater management procedures	Continue enforcement of Standard 8 for proposed development projects in the City.
4.2	Continue to Inspect/Maintain Control Measures at Construction Sites	City Engineer	Continue Existing Program	City Engineer's Office inspects all sites daily while construction activity is going on. Any activities that needed to be addressed were brought to the attention of the site developer immediately, corrective action was taken and the site was re-inspected. No violations were reported.	Continue City's Site Inspection Policies.
4.3	Continue to Enforce procedures for collection/filing of public comments	All Departments	Continue Existing Program	All departments keep their own public comments on file. When the public places a complaint through the E-Gov software, the complaint is automatically sent to the specified department. All departments respond immediately and keep the public updated throughout every step of completing the task.	The City will continue to implement and maintain the E-Gov software and track public complaints.
4.4	Develop and present an Ordinance for Erosion Control Measures and Construction Material Management for Construction Sites more than 1-acre.	City Engineer	Draft Ordinance language and present to City Council for approval	City continued the process of revising Rules and Regulations governing site developments and erosion control. Currently, the City Engineer and Planning Board have enforced erosion control measures for all projects that have come under their review for the last twelve years.	Planning Board to complete revisions to Rules and Regulations that adopt formal guidelines for erosion control for developments of one acre or more. Approval of the Rules and Regulations is dependent on City Council vote.

## 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 Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities –
5.1	Continue application of Planning Board Rules and Regulations for Subdivisions	City Engineering	Continue enforcement of existing regulations	City has enforced Rules and Regulations for all projects that have come under its review. Twenty Five (25) projects were reviewed last year.	Continue enforcement of existing Rules and Regulations. Revise accordingly ó see BMP 4.4.
5.2	Apply Standards 2, 3, 4, 7 and 9 of MA Stormwater Policy to the entire City	City Engineering	Develop/Incorporate modifications to existing regulations as needed	City Engineer's Office and Planning Board have enforced erosion control measures for all projects that have come under their review for the last eleven years. The Planning Board is in the process of revising its Rules and Regulations. City expects to incorporate formal reference to the MA Stormwater Policy Standards.	City to complete revisions to Rules and Regulations. Approval of the Rules and Regulations is dependent on City Council vote.
5.3	Develop/Implement Ordinance/Regulation to ensure long-term maintenance of private structural BMPs.	City Engineering	Draft Bylaw developed and presented to City Council	City enforces stormwater management in all projects that come under its review. Each development that incorporates a private BMP must submit an Operations and Management Plan for the BMP.	City to complete revisions to Rules and Regulations. Approval of the Rules and Regulations is dependent on City Council vote.

## 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 Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities –
6.1	Continue Street Sweeping Program	DPW & Lowell Regional Wastewater Utility	Percentage of streets swept annually with emphasis on sensitive receptors	The City of Lowell currently performs all street sweeping operations in house in order to enhance the effectiveness of this preventative maintenance program. The City maintained its current street sweeping and residuals disposal program to reduce the migration of solids in the city's drainage system. All (100%) of city streets were swept in 2015 at least once and some streets were swept multiple times.	The City of Lowell will continue existing program.
6.2	Continue Catch Basin Cleaning Program	Lowell Regional Wastewater Utility	Percentage of catch basins cleaned annual; with emphasis on sensitive receptors	The City of Lowell maintained its current catch basin cleaning and residuals disposal program to reduce the migration of solids in the city's drainage system. LRWWU purchased a new vacuum truck and has resulted in increasing the staff's ability to clean catch basins more efficiently. In 2015, 515 catch basins were cleaned by both the LRWWU staff and contractors.	The City of Lowell will continue existing program.
6.3	Continue Salting and Snow Removal Practices	DPW	Continue existing programs for salt storage/use and management, especially in sensitive areas	The City continued its existing salt storage/snow removal practices. One additional salt storage yards was deployed in 2015. Records of salt use are kept by DPW. Lowell has stopped spreading sand on the roads and now uses only salt. This has decreased the amount of solids getting into the sewer and drain lines.  Since the City bought new salt dispensing trucks and installed the Cirus salt tracking system in all of the equipment used during winter weather, the salt has been evenly distributed with the newest and most effective techniques while tracking and calibrating the dispensing technique based on weather conditions. The new system has resulted in a 50% reduction in salt usage. The City has also bought two new dump trucks with new salt spreaders	Continue existing program.
6.4	Continue Vehicle Washing Practices	DPW	Continue existing program in DPW yard	City vehicles were washed in approved areas.	Continue existing program. Modify practices as necessary to minimize stormwater impacts.

<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 Thirteen (2015)</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities –</b>
6.5	Continue Vehicle Maintenance	DPW	Continue existing program in DPW yard	City vehicle maintenance was performed in approved areas. Vehicle material waste was either used to heat the DPW's maintenance garage using two new clean burn, oil fired heating systems or disposed of off-site by approved waste handlers.	Continue existing program. Modify practices as necessary to minimize stormwater impacts.
6.6	Park and Landscape Maintenance	Parks Department	Minimize herbicides, pesticides, fertilizers in sensitive areas; maintain records	The City only applies fertilizers to areas with irrigations systems. Records of fertilizer/herbicide/pesticide use are maintained by the Parks Department. The City has reduced its use of fertilizers to improve stormwater quality.	Continue existing program. The City will continue to examine existing fertilizer practices and make revisions as necessary to minimize impact to stormwater runoff and receiving streams.
6.7	Employee Education Program	Lowell Regional Wastewater Utility	Four hours of training on stormwater topics per permit term	City reviewed potential training materials.	City to initiate training of employees on stormwater impacts during this period.

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year Thirteen (2015) (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
<b>Not Applicable</b>					
Revised					

**7a. Additions**


**7b. WLA Assessment**

**Part IV. Summary of Information Collected and Analyzed**

N/A