

Municipality/Organization: Medford

EPA NPDES Permit Number: MA041049

MassDEP Transmittal Number: W228064

Annual Report Number & Reporting Period: Year 13
April 1, 2015 – March 31, 2016

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2016)

Part I. General Information

Contact Person: Mr. Brian Kerins **Title:** Interim Commissioner of Public Works

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Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:  _____

Printed Name: Brian Kerins

Title: Interim Commissioner of Public Works

Date: April 29, 2016

Part II. Self-Assessment

During the 2015-2016 permit year, the City of Medford continued implementation of the tasks outlined in the 5-Year Plan under the 2003 NPDES Small Municipal Separate Storm Sewer Systems (MS4) permit. Numerous BMPs were attained prior to this period and have been continued, including updating stormwater related information on the City's website and making it available in the DPW office, hazardous and yard waste collection activities, maintaining signs, and holding public meetings in which stormwater related activities are discussed. In addition, the City continues to follow good housekeeping and pollution prevention procedures with street sweeping, catch basin cleaning, and other municipal operations.

2015-2016 Accomplishments:

The City's Stormwater System Ordinance continues to be in effect. The City is working on towards finalizing the Stormwater Rules and Regulations, including work on construction and post-construction BMPs.

Illicit connection investigations continued through this permit year. One overflow connection between sewer and drain was identified on Massachusetts Avenue at South Border Road and three sewer services on Albion Street were found to be partially discharging in the underdrain on Main St (Winter Brook drainage area).

Pubic education informational posters are on display at City Hall, High School and River's Edge development. The City's stormwater webpage <http://www.medfordma.org/departments/energy-and-environment/storm-water-management/> and the webpage <http://medfordenergy.org/gogreen/storm-water-specific/> are maintained.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
1A	Recycling/household hazardous waste information on website.	DPW	Update website throughout year.	Website was updated with new links and the collection dates for the 2015/2016 permit year. Information about the new recycling/trash program is included on the website. http://www.medfordma.org/departments/recycling/	Continue to update website with event dates.
1B	Recycling/household hazardous waste information on pamphlet in DPW Office.	DPW	Make pamphlet available daily in the DPW Office.	Pamphlet is available in the DPW Office and on the City's website. http://www.medfordma.org/departments/recycling/	Continue to display pamphlet in DPW Office.
1C	Recycling/household hazardous waste information on pamphlet to be mailed.	DPW	Mail pamphlet to 75% of residents.	Measure Complete. Information available on City website http://www.medfordma.org/departments/recycling/	Continue to update recycling and hazardous waste information on website.
1D	Bilingual Education Information	DPW, High School translator	Translate recycling pamphlet into Spanish and make available in DPW office	Recycling information is available on City of Medford website. http://www.medfordma.org/departments/recycling/	Continue to display pamphlet in DPW Office and on website.
1E	Arbor Day Celebration	DPW, Tree Warden	One talk will be given to one school per year.	Activities included tree pruning and new trees planting.	Include stormwater information in an event related to Arbor Day or Earth Day.
1F	"No Dumping Allowed" Signs	DPW, Parks Department	Existing signs in parks.	Existing signs were maintained.	Existing signs will be maintained.
1G	"No Dogs or Animals Allowed" Signs	DPW, Parks Department	Existing signs in parks.	Existing signs were maintained.	Existing signs will be maintained.
1H	"Do not feed the Geese" Signs	DPW, Board of Health	Design and install one sign at Wright's Pond.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. "Do not feed the Geese" signs, procedures, and fines will be determined during this review.	Design and install "Do not feed the Geese" signs. Establish fines in upcoming year as Rules and Regulations are finalized.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
1I	“No Littering” signs	DPW, Parks	Design and Install “No Littering” signs in Permit	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. “No Littering” signs, procedures, and fines will be determined during this review.	Design and install “No Littering” signs. Establish fines in upcoming year as Rules and Regulations are finalized.
1J	“No Household Trash” signs	DPW, Parks	Install City owned barrels that read “No household Trash”	Stormwater Rules and Regulations have been drafted. “No Household Trash” signs, procedures, and fines will be determined during this review.	Design and install “No Household Trash” signs. Establish fines in upcoming year as Rules and Regulations are finalized.
1K	Geese Dropping Article in Newspaper	DPW, Environmental Agent	Place one article in the paper Years 1, 3, and 5.	None required.	Completed.
1L	Pet Waste Article in Newspaper	DPW, Environmental Agent	Place one article in the paper Years 1, 3 and 4	None required. Pet waste information is also available on the City’s website at: http://www.medfordma.org/departments/energy-and-environment/storm-water-management/ In addition, Medford implemented a targeted Public Education Campaign throughout 2015.	Completed.
1M	Stormwater Video on Local Cable Channel	DPW, Local Cable Access Staff	City will buy a stormwater educational video and play on a regular basis the third year.	None required. Stormwater pollution information is also available on the City’s website at: http://www.medfordma.org/departments/energy-and-environment/storm-water-management/ In addition, Medford implemented a targeted Public Education Campaign throughout 2015.	Play stormwater video on Public Access channel once per year.
1O	Publicize fines for littering, illegal dumping and failure to pick up pet waste in newspaper	DPW, Stormwater Advisory Committee	Publish fines in paper when Ordinances are approved and established.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Signs, procedures, and fines will be determined during this review. In addition, Medford implemented a targeted Public Education Campaign throughout 2014.	Establish and publicize fines in upcoming year as Rules and Regulations are finalized. Implement new Public Education Campaign.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
Revised		DPW, Stormwater Board			
1P	Educate Local Businesses	DPW, Environmental Agent	Distribute flyers to 75% of businesses in the third year.	None required.	Invite City Businesses to annual meetings.
1Q	Assess stormwater information at existing City Events.	DPW	Assess one existing City event for opportunities to include stormwater information.	Provided stormwater information at City Hall. Regular Conservation Commission meetings are held at City Hall and are open to the public. Stormwater issues are routinely discussed at these meetings. In addition, Medford implemented a targeted Public Education Campaign throughout 2015.	Continue to provide stormwater information at City Hall and for local events and implement new Public Education Campaign.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
2A	Oil-Based Paint Collection at DPW Yard	DPW, Recycling	DPW to accept Latex/oil-based paint from residents at DPW Yard once a month between May and October.	Residents were able to bring latex and oil-based paint to the DPW Yard (see Part V).	DPW will continue to collect these materials at the DPW Yard.
2B	Hazardous Waste Drop-off in Lexington	DPW, Recycling	Advertise the hazardous waste drop-off in Lexington in mailer and daily in DPW office as a pamphlet.	Advertised this service in the recycling/HHW pamphlet and on the City website. Medford relies on the Town of Lexington to collect these materials at the Minuteman Hazardous Household Products Facility.	Continue to advertise this service.
2C	Curbside recycling	DPW, Recycling	Weekly pick up of recyclables once every two weeks year-round.	Recyclables picked up every other week (see Part V).	Continue to provide this service.
2D	Mercury Exchange	DPW, Recycling, Board of Health	DPW to accept mercury at the DPW Yard once/month May-October.	Residents were allowed to drop off mercury products at the DPW Yard on specified days.	Continue to provide this service.
2E	Nickel-Cadmium Recycling	DPW, Recycling	DPW to accept rechargeable nickel-cadmium batteries in the DPW office.	Residents were allowed to drop off batteries at the DPW office daily during regular office hours.	Continue to provide this service.
2F	Leaf and yard waste collection	DPW, Recycling	DPW to collect leaf and yard waste every other week curbside from May to November.	DPW collected leaf and yard waste every other week April through November (see Part V). Schedule posted on website.	Continue to provide this service.
2G	Mystic River Cleanup	Friends of the Mystic River, MyWRA, DPW	DPW to collect trash volunteers pick up at the Mystic River Clean up Day.	"Mystic Community Earth Day" events included clean-up along the River at Condon Shell Park and MacDonald Park, trail clearings and plantings.	Continue to provide cleanup and disposal services for Mystic River Watershed Events.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
2H	Public Meetings/Notification	DPW	Hold one public meeting to present stormwater program progress.	Targeted Public Education Campaign was implemented in 2015.	Hold a public meeting in Year 13.
2I	Stormwater Contact to receive and address public complaints or concerns	DPW	Establish a Stormwater Contact	Stormwater contact established, (Alicia Hunt, Energy and Environment Dept., 781-293-2137) identified at public meetings, in newspaper, and on website.	Continue to expand publicity for this contact through newspaper, etc.
2J	Earth Day Activity	DPW – Energy and Environment Department	Include a stormwater activity in Earth Day Events	No stormwater activities included in Earth Day events. Mystic Community Earth Day included clean-up, trail clearings and plantings along the Mystic River.	Continue to include stormwater activity/information at Earth Day and Clean Energy Events organized by the City. Evaluate new opportunities for including stormwater outreach at these events.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
3A	Fines for Illegal Dumping	DPW	Establish fines for illegal dumping.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Signs, procedures, and fines will be determined during this review.	Establish and publicize fines in upcoming year as Rules and Regulations are finalized.
3B	Enforcement of Fines for Littering and Pet Waste	Police	More stringent enforcement of Fines for Littering and Pet Waste	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Signs, procedures, and fines will be determined during this review.	Establish and publicize fines in upcoming year as Rules and Regulations are finalized. Implement stringent enforcement program with Police.
3C	Expand storm sewer map to include all outfalls.	DPW, Engineering	Finish mapping by Year 5.	The City of Medford finalized their stormwater GIS mapping in 2011.	Continue to update stormwater system in GIS, as needed.
3D	Illicit Discharge Ordinance	DPW, Engineering, Building, Law	Float new Ordinance, one year of comment period, continue education.	Measure completed.	Measure completed.
3E	Detection and Elimination Plan	DPW, Engineering	Trace the Source of the Illicit Discharges.	On-going IDDE work in accordance with the City's IDDE Plan and the Clean Water Act Administrative Order issued by the EPA in August 2009. Detailed compliance reports were submitted to the EPA in July 2015 and January 2016 regarding IDDE work. Manholes were inspected, buildings dye tested. This year, the City identified 3 illicit discharges. A table summarizing this year's IDDE investigations is included in Appendix A to this report.	Complete work according to IDDE Plan implementation schedule.
3F	Illicit Discharge Education for Public	DPW, Engineering	Included in Measure 1	Included In Measure 1	Included In Measure 1
3G	Illicit Discharge Education for Municipal Employees	DPW	Included in Measure 6	Staff received updates as needed.	Continue to update staff on IDDE Program goals, procedures, and status.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
4A	Erosion and Sediment Control Ordinance “Construction Ordinance”	DPW, Engineering, Building, Legal	Float new Ordinance, one year of comment period, continue education.	Measure completed.	Measure completed.
4B	Erosion and Sediment Control BMPs/ Requirements	DPW, Engineering, Building, Legal	Prepare Draft requirements to be referenced or incorporated into the Construction Ordinance.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Erosion and sediment control BMPs and requirements will be established during the review process.	Finalize Erosion and Sediment Control BMPs/Requirements in upcoming year as Rules and Regulations are finalized.
4C	Construction Site Plan Review Procedures	DPW, Engineering, Building, Legal	Prepare draft Construction Site Plan Review Procedure to be included or referenced Ordinance.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Construction site plan review procedures will be established during the review process.	Finalize Construction Site Plan Review Procedures in upcoming year as Rules and Regulations are finalized.
4D	Construction Site Inspection and Enforcement Procedures	DPW, Engineering, Building, Legal	Prepare draft Site Inspection and Enforcement Procedure to be included or referenced in Ordinance.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Inspection and Enforcement procedures for construction sites will be established during the review process.	Finalize Site Inspection and Enforcement Procedures in upcoming year as Rules and Regulations are finalized.
4E	Stormwater Contact to receive and address public complaints or concerns	DPW	Expand publicity regarding stormwater contact (paper, etc.)	Stormwater contact has been established: Alicia Hunt, 781-293-2137. Contact information has been provided at public meetings, on website, and in articles published in the Medford newspaper.	Update and maintain contact information on website and distributed pamphlets.
4F	Minimum BMPs to Consider and thresholds	Stormwater Advisory Committee	Finalize City’s decision on thresholds and minimum BMP requirements and include information in Draft Ordinances.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Thresholds and minimum BMP requirements will be established during the review process.	Finalize thresholds and minimum BMP requirements in upcoming year as Rules and Regulations are finalized.

Revised		DPW, Engineering, Stormwater Board			
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5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
5A	Encouragement of "Better Site Design"	DPW, Engineering, Building, Law	Formal document on better site design by the end of Year 5	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Better site design practices will be established during the review process.	Finalize better site design practices in upcoming year as Rules and Regulations are finalized.
5B	Post-Construction Runoff Ordinance	DPW, Engineering, Building, Law	Float new ordinance, one year of comment period, continue education.	Measure completed.	Measure completed.
5C	Choose Structural and Non-Structural BMPs	DPW, Engineering	Prepare final procedures.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Procedures for choosing structural and non-structural BMPs will be established during the review process.	Finalize procedures for choosing structural and non-structural BMPs in upcoming year as Rules and Regulations are finalized.
5E	Procedures for Implementation of Structural BMPs	DPW, Engineering	Prepare final procedures.	Stormwater Rules and Regulations have been drafted and are under review by the Stormwater Board. Procedures for the implementation of structural BMPs will be established during the review process.	Finalize structural BMPs implementation procedures in upcoming year as Rules and Regulations are finalized.

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 13	Planned Activities for Subsequent Years
6A	Regular Street Sweeping	DPW, Highway	Sweep main Streets year-round; Sweep all streets and municipal lots twice per year.	DPW swept all streets twice (spring and fall) and swept main streets weekly throughout the year.	Continue existing sweeping schedule.
6B	Regular Catch Basin Cleaning	DPW, Highway	Cleaned catch basins once per year as stated in the revisions for the 2003/2004 Annual Report.	1,500 catch basins cleaned. 7,279 linear feet of drain pipes were cleaned.	Continue cleaning catch basins annually. Developing targeted informational mailing for the neighborhoods associated with problematic catch basins.
6D	Employee Training	DPW, Engineering	Continue existing training; determine necessary personnel and topics; schedule training.	Employee training updates to employees as needed.	Continue annual training.
6E	Municipal O&M	DPW, Highway, Parks, Engineering	Develop Draft BMPs for Pollution Source Reduction/Elimination from Municipal Activities including waste disposal procedures.	DPW salt shed construction completed.	Continue implementation of BMPs for pollution reduction/elimination from municipal activities.
6H	Geese Maintenance Contract	DPW, Engineering	Reduce permanent geese populations near water bodies.	Geese maintenance contract was not continued.	Continue discouraging geese; evaluate effectiveness of geese maintenance program.

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities – for Subsequent Years
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

The City of Medford keeps records of operation and maintenance activities, such as catch basin cleaning and street sweeping. A summary of these records is below. See Appendix B for list of sewer and drain repairs.

- The City collected 854 tons of street sweepings between April 1, 2015 and March 31, 2016. The sweepings were hauled away by contractor W. L. French. The cost of the collection and disposal was \$30,942.
- Waste Management collected 1,840 tons of residential yard waste between April 2015 and March 2016. The cost of disposal was \$38/ton, total \$69,929
- The City's contractor D&M cleaned 1,500 catch basins during Permit Year 13. The clean-up cost, including disposal costs, was \$25/catch basin, total \$37,485.
- The City repaired, replaced or installed 13 catch basins, 5 drain manholes, and 6 sewer manholes during Permit Year 13. 40,603 feet of sewer and 7,279 feet of drain were cleaned and inspected. 96 feet of drain were installed. 449 linear feet of sewer main and 304 linear feet of sewer service pipe were replaced or installed.

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, 2015 through March 31, 2016)

Programmatic

		Response
Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures **	(Preferred Units)	\$720,000 (est.)
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	Not Known
Stormwater management committee established	(y/n)	Yes. Stormwater Board
Stream teams established or supported	(# or y/n)	Yes – supported
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	None – no event this year
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	
▪ community participation **	(# or %)	
▪ material collected **	(tons or gal)	
School curricula implemented	(y/n)	No

Legal/Regulatory

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft Review	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

	Response
Outfall mapping complete	(%) 100
Estimated or actual number of outfalls	(Preferred Units) 111
System-Wide mapping complete (complete storm sewer infrastructure)	(%) 100
Mapping method(s)	
▪ Paper/Mylar	(%) 95
▪ CADD	(%) 80 (est.)
▪ GIS	(%) 100
Outfalls inspected/screened **	(# or %) 111 (92%)
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %) 3
Illicit discharges identified **	(#) 19
Illicit discharges identified (Since beginning of permit coverage)	(#); and (est. gpd) 0
Illicit connections removed **	(#); and (est. gpd) 13, est. 3,675 gpd
Illicit connections removed (Since beginning of permit coverage)	(%) >99
% of population on sewer	(%) <1
% of population on septic systems	

Construction

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

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	No
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)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	1
Qty of structures cleaned **	(#)	1,500
Qty. of storm drain cleaned **	(%, LF or mi.)	7,279 feet
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		
<ul style="list-style-type: none"> Annual budget/expenditure (labor & equipment)** 	(\$)	\$37,485 contract
<ul style="list-style-type: none"> Hourly or per basin contract rate ** 	(\$/hr or \$ per basin)	N/A

• Disposal cost**	(\$)	Included in contract cleaning cost
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	
• Vacuum truck(s) owned/leased	(#)	
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vector **	(%)	

		Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	2
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr) (Preferred Units)	~29
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Compost
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	In house
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	No
• % 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 %)	

▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	No

		Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	(Preferred Units) % NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	NaCl and sand only. Percent varies by storm requirements.
Pre-wetting techniques utilized **	(y/n or %)	No
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 %)	0
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln 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 #)	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	0

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	

Appendix A:
Illicit Discharge Detection and Elimination Summary
Table

Illicit Discharge Detection & Elimination Summary Table for Year 13

Item	Total
Outfalls Inspected (dry weather)	5
Outfalls Sampled (dry weather)	0
Manholes Inspected	35
Manholes Sampled	2
Catch Basins Inspected	1
Catch Basins Sampled	0
Buildings Dye-tested	45
Drainage Structures Dye-tested	0
Closed-circuit Television Inspection (LF)	Drain: 7,279 Sanitary Sewer: 40,603
Illicit Discharges Identified	3
Illicit Discharges Removed	0
Estimated Amount of Illicit Flow Removed (gpd)	0

Appendix B:
Pollution Prevention and Good Housekeeping in
Municipal Operations

2015-2016 Sewer and Storm Drain Repairs

**City of Medford, Massachusetts
2015-2016 Storm Drain and Sewer Repairs**

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System	Date	Location	Company	Field Work Completed	Length of Pipe (linear feet)	Size of Pipe	Illicit Discharge Removed	Comments
Drain	4/1/2015	Norwich Circle	Rapid Flow	Clean & CCTV	89'(12"), 109(21")	12" & 21"		
Drain	4/2/2015	Grove St./Terrier Rd.	Rapid Flow	Clean & CCTV	952	12"		
Drain	7/7/2015	Englehutt & Walter Sts.	Rapid Flow	Clean & CCTV	316(12")/558(24")	12" & 24"		
Drain	7/7/2015	Clewley Rd.	Rapid Flow	Clean & CCTV	112	12"		
Drain	7/13/2015	Mass. Ave. at Westwood Rd	Rapid Flow	Clean & CCTV	250'	12"		
Drain	7/13/2015	Osborne Rd./Cedar Rd. N	Rapid Flow	Clean & CCTV	59'(12"), 135(42")	12" & 42"		
Drain	7/16/2015	Grover Rd.	Rapid Flow	Clean & CCTV	194'	12"		
Drain	7/30/2015	West St./Lyman Ave./North St.	Rapid Flow	Clean & CCTV	937'(12"), 15"(814')	12" & 15"		
Drain	8/14/2015	Fern Rd./Fulton Spring Rd./Rossina St./Grover	Rapid Flow	Clean & CCTV	213'(12"), 26'(15"), 78'(18"), 25'(24")	12", 15", 18", 24"		
Drain	9/3/2015	Magoun Ave.	Rapid Flow	Clean & CCTV	927'	12"		
Drain	10/5/2015	Clewley Rd.	Rapid Flow	Clean & CCTV & Remove roots	343'	12"		
Drain	10/20/2015	Arlington St. at Boston Ave.	D'Allessandro	Installed 2 Catch Basins				
Drain	10/23/2015	Boston Ave. at Arlington St.	D'Allessandro	Installed 2 Drain Manholes				
Drain	10/23/2015	Boston Ave. at Arlington St.	D'Allessandro	Installed drain pipe (DI)	77	10"		
Drain	10/29/2015	Forest St. at Lawrence Rd.	D'Allessandro	Installed 1 DMH, 1 CB				
Drain	10/29/2015	Forest St. at Lawrence Rd.	D'Allessandro	Installed drain pipe (DI)	19	8"		
Drain	11/19/2015	Brookings St.	Rapid Flow	Clean & CCTV	192'(18"), 747'(30")	18" & 30"		
Drain	12/4/2015	Woodside Rd./Whitney Rd.	Rapid Flow	Clean & CCTV	156'(30"), 47'(36")	30" & 36"		
Drain	1/4/2016	Almont St. at Salem St.	City Forces	Repaired CB				
Drain	1/4/2016	256 Fulton St.	City Forces	Repaired CB				
Drain	1/7/2016	Spring St. at Washington St.	City Forces	Rebuilt CB				
Drain	2/17/2016	Burbank Rd	City Forces	Replaced DMH				
Drain	2/18/2016	11 Harold St	City Forces	Replaced DMH				
Drain	3/1/2016	Park St. at Salem St	City Forces	Repaired CB				
Drain	3/7/2016	192 Brookside Pkwy	City Forces	Repaired CB				
Drain	3/9/2016	193 Brookside Pkwy	City Forces	Repaired CB				
Drain	3/9/2016	Main St.	City Forces	Repaired CB				
Drain	3/9/2016	Willis Ave	City Forces	Rebuilt CB				
Drain	3/11/2016	Princeton St	City Forces	Repaired CB				
Drain	3/11/2016	Fountain St	City Forces	Repaired CB				
Sewer	4/1/2015	Norwich Circle & Terrier Road	Rapid Flow	Clean & CCTV	70(10"), 1448(8")	8" & 10"		
Sewer	4/2/2015	NorwichCir./Grove St./Terrier Rd.	Rapid Flow	Clean & CCTV	886'	8"		
Sewer	4/13/2015	6 Valley Park St.	City Forces	Replaced sewer service section	27	6"		
Sewer	7/9/2015	Mass. Ave. at Westwood Rd	Rapid Flow	Clean & CCTV	92'	8"		
Sewer	7/9/2015	Mass. Ave. at Westwood Rd	City Forces	Replaced sewer main section	15	8"		
Sewer	7/11/2015	73 West St.	City Forces	Replaced sewer service section	8	6"		
Sewer	7/13/2015	Mass. Ave. at Westwood Rd	Rapid Flow	Clean & CCTV	8"			

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System	Date	Location	Company	Field Work Completed	Length of Pipe (linear feet)	Size of Pipe	Illicit Discharge Removed	Comments
Sewer	7/14/2015	Grove St./Bussell St./Woburn St.	Rapid Flow	Clean & CCTV	1886'(8"), 172'(10")	8" & 10"		
Sewer	7/16/2015	Woburn St./Arlington St./Jerome St.	Rapid Flow	Clean & CCTV	1036'(8"), 343'(12")	8" & 12"		
Sewer	7/17/2015	Cottage St./Mystic River Rd./Gourley Rd.	Rapid Flow	Clean & CCTV	1546'(8"), 249'(10")	8" & 10"		
Sewer	7/18/2015	22 Cleveland St.	City Forces	Replaced sewer service section	10	6"		
Sewer	7/20/2015	Cottage St./Allston St./Prescott Rd.	Rapid Flow	Clean & CCTV	748'(8"), 204'(10")	8" & 10"		
Sewer	7/20/2015	Dwyer Circle	Rapid Flow	Clean & CCTV	597'	8"		
Sewer	7/21/2015	Auburn St./Summer St.	Rapid Flow	Clean & CCTV	1428'	8"		
Sewer	7/23/2015	Summer St./Tyler Ave	Rapid Flow	Clean & CCTV	1219'	8"		
Sewer	7/29/2015	Tyler Ave./Johnson Ave	Rapid Flow	Clean & CCTV	1545'	8"		
Sewer	7/30/2015	Tyler Ave.	Rapid Flow	Clean & CCTV	721	8"		
Sewer	7/31/2015	West St./Lyman Ave./Cotting St.	Rapid Flow	Clean & CCTV	989'(8"), 428'(10")	8" & 10"		
Sewer	7/31/2015	583 Main St.	City Forces	Replaced sewer service section	12	6"		
Sewer	8/8/2015	16 Farragut Ave.	City Forces	Replaced sewer service section	7	6"		
Sewer	9/3/2015	Magoun Ave.	Rapid Flow	Clean & CCTV	1743'	8"		
Sewer	9/9/2015	Brooks St.	Rapid Flow	Clean & CCTV	785'	8"		
Sewer	9/10/2015	Brooks St./Grover Rd./Regis Rd.	Rapid Flow	Clean & CCTV	1461'	8"		
Sewer	9/15/2015	Fulton St./Water St.	Rapid Flow	Clean & CCTV	1265'	8"		
Sewer	9/17/2015	Fulton St./Webster St.	Rapid Flow	Clean & CCTV	1418'	8"		
Sewer	9/18/2015	Hadley St./Walker Ct./Almont St./Mystic Ave.	Rapid Flow	Clean & CCTV	205'(6"), 200(8"), 755(15")	6", 8", 15"		
Sewer	9/19/2015	12 Yale St.	City Forces	Replaced sewer service section	6	6"		
Sewer	9/21/2015	Mystic Ave./Hancock Ct.	Rapid Flow	Clean & CCTV	371'(8"), 1067'(15")	8" & 15"		
Sewer	9/22/2015	Crescent St./Emery St./Capen St./Hillsdale Rd.	Rapid Flow	Clean & CCTV	442'(6"), 1273'(8")	6" & 8"		
Sewer	9/23/2015	Hillsdale Rd./Edison Ave./Tesla Ave.	Rapid Flow	Clean & CCTV	1380'	8"		
Sewer	9/28/2015	Adams St./Osgood St.	Rapid Flow	Clean & CCTV	1557'	8"		
Sewer	9/29/2015	Osgood St./Quincy St.	Rapid Flow	Clean & CCTV	776'	8"		
Sewer	10/2/2015	Quincy St./Dexter St.	Rapid Flow	Clean & CCTV	1271'	8"		
Sewer	10/5/2015	Higgins Ave.	Rapid Flow	Clean & CCTV	278'	6"		
Sewer	10/10/2015	95 Otis St.	City Forces	Replaced sewer service section	23	6"		
Sewer	11/14/2015	42 Butler St	City Forces	Replaced sewer service section	10	6"		
Sewer	11/18/2015	40 Lambert St	City Forces	Replaced sewer service section	22	4"		
Sewer	11/19/2015	Mass. Ave. at Westwood Rd	City Forces	Replaced sewer main section	9	8"		
Sewer	11/19/2015	Brookings St.	Rapid Flow	Clean & CCTV	947'	8"		
Sewer	11/20/2015	Curtis St./Maple St./South St.	Rapid Flow	Clean & CCTV	1059'(8"), 306'(10")	8" & 10"		
Sewer	11/23/2015	29 Pinkham St.	City Forces	Replaced sewer service section	6	6"		
Sewer	11/23/2015	Manning St./Maple St./Walnut St.	Rapid Flow	Clean & CCTV	1278'	8"		
Sewer	11/24/2015	Whittier Rd./Whitney Rd./Woodside Rd.	Rapid Flow	Clean & CCTV	1616'	8"		
Sewer	11/25/2015	Touro Ave.	Rapid Flow	Clean & CCTV	734'	8"		
Sewer	11/30/2015	Landry Rd. @ Grover Red.	D'Allessandro	Replace MH K-096				

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Sewer	12/2/2015	Metcalfe St./William St./Alfred Terr./William Pl.	Rapid Flow	Clean & CCTV	201'(6"), 1349'(8")	6" & 8"		
Sewer	12/4/2015	Edward St./Edward Pl./Leyden St./Sanger St.	Rapid Flow	Clean & CCTV	678(6"), 414'(8")	6" & 8"		
Sewer	12/7/2015	Lund Rd.	D'Allessandro	Replace MH K-121				
Sewer	12/8/2015	Gaston St.	D'Allessandro	Replace MH N-142A				
Sewer	12/9/2015	Lund Rd.		Replace F&C MH K-120				
Sewer	12/16/2015	33 Touro Ave.	City Forces	Replaced sewer service section	13	6"		
Sewer	12/17/2015	11 Wildwood Rd.	City Forces	Replaced sewer service section	20	6"		
Sewer	12/17-23/2015	Lookout Rd.	D'Allessandro	Replace sewer section L-083 to L-082 & 7 services	205'	8", 6" services		
Sewer	12/18/2015	Summit Rd.	Rapid Flow	Clean & CCTV & Remove roots	167'	8"		
Sewer	3/21/2016	Gaston St	D'Allessandro	Replace N-142 - N-388	220' PVC	8", 6" services		

CCTV (closed circuit TV): pipe was cleaned and televised