

Municipality/Organization: Medford

EPA NPDES Permit Number: MA041049

MassDEP Transmittal Number: W228064

Annual Report Number Year 15
& Reporting Period: April 1, 2017 – March 31, 2018

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2018)**

Part I. General Information

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

Date: May 1, 2018

Part II. Self-Assessment

During the 2017-2018 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.

2017-2018 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.

No illicit connections were found this permit year. The sewer system rehabilitation project in North Medford is on-going. During this reporting period manhole inspections, smoke and dye testing were performed, as well as pipe lining of sewer mains resulting in I/I removal. The catch basin disconnection from the sewer project in North Medford is complete, another project that achieves inflow removal. An overflow connection from the drain manhole to the sewer system on Mass. Ave at South Border Road was removed, resulting in inflow removal.

The City collaborated with the MyWRA on a Coastal Zone Management grant to identify publicly-owned sites that are good candidates for construction of stormwater BMPs that would benefit the water quality of the Mystic River and, ultimately, the harbor. A bioretention area will be constructed for runoff from the Wright's Pond parking lot.

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 15	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 2017/2018 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 15	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.	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.	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 Board	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.	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 15	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.	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 15	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 MacDonald Park, trail clearings and plantings, invasive plants removal.	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 15	Planned Activities for Subsequent Years
2H	Public Meetings/Notification	DPW	Hold one public meeting to present stormwater program progress.	Targeted Public Education Campaign	
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 15	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 the 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 2017 and January 2018 regarding IDDE work. Manholes were inspected, buildings dye tested. A table summarizing 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 15	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 Board	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 15	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 15	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.	3,211 catch basins cleaned. 1,182 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 continues to follow BMPs for municipal O&M	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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – for Subsequent Years
Revised					
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 for the reporting period between April 1, 2017 and March 31, 2018 is below. See Appendix B for list of sewer and drain repairs.

- The City collected 808 tons of street sweepings. The sweepings were hauled away by contractor W. L. French. The cost of the collection and disposal was \$39.12/ton for 2017 and \$45.94 for 2018, total of \$32,095.
- Waste Management collected 1,914 tons of residential yard waste. The cost of disposal was \$39 to \$40/ton, total cost of residential yard waste collection and disposal was \$72,910.
- The City's contractor RJ Gabriel cleaned 3,211 catch basins. The clean-up cost, including disposal, was \$35/catch basin, total \$112,385.
- The City repaired, replaced or installed 16 catch basins, 19 drain manholes, and 6 sewer manholes.
1,182 linear feet of drain and 1,289 linear feet of sewer were cleaned and inspected.
1,569 linear feet of drain were installed.
283 linear feet of sewer main and 203 linear feet of sewer service pipe were replaced or installed.
1,420 linear feet of sewer main was lined.

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, 2017 through March 31, 2018)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures **	(\$)	\$150,000 (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.)	Yes
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 in 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

	(Preferred Units)	Response
Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	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 %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	111 (92%)
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	19
Illicit connections removed **	(#); and (est. gpd)	0
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	13, est. 3,675 gpd
% of population on sewer	(%)	>99
% of population on septic systems	(%)	<1

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	
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 **	(#)	3,211
Qty. of storm drain cleaned **	(%, LF or mi.)	1,182 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)** 	(\$)	\$112,385 contract
<ul style="list-style-type: none"> Hourly or per basin contract rate ** 	(\$/hr or \$ per basin)	\$35 / basin

• 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 vactor **	(%)	

	(Preferred Units)	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)	~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

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	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 15

Item	Total
Outfalls Inspected (dry weather)	0
Outfalls Sampled (dry weather)	0
Manholes Inspected	32
Manholes Sampled	0
Catch Basins Inspected	20
Catch Basins Sampled	0
Buildings Dye-tested	0
Drainage Structures Dye-tested	0
Closed-circuit Television Inspection (LF)	Drain: 1,182 Sanitary Sewer: 1,289
Illicit Discharges Identified	0
Illicit Discharges Removed	0
Estimated Amount of Illicit Flow Removed (gpd)	0

Appendix B:
Pollution Prevention and Good Housekeeping in
Municipal Operations

2017-2018 Sewer and Storm Drain Repairs

**City of Medford, Massachusetts
2017-2018 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	4/8/2017	Main St at Medford St	City	Repaired CB				
Drain	4/10/2017	Dexter St at Main St	City	Repaired CB				
Drain	4/15/2017	Columbus School	City	Repaired CB				
Drain	4/15/2017	Hicks Ave	City	Repaired CB				
Drain	4/15/2017	Auburn St at Prescott St	City	Repaired CB				
Drain	4/17/2017	98 Boston Ave	City	Repaired DMH				
Drain	5/3/2017	267 Spring St	City	Repaired CB				
Drain	5/20/2017	45 Ship Ave	City	Repaired DMH				
Drain	5/20/2017	67 Ship Ave	City	Repaired CB				
Drain	5/20/2017	50 Dearborn St	City	Repaired CB				
Drain	9/27/2017	Cedar Road North MH 2676	D'Allessandro	Raised MH 2676 at House No. 124				
Drain	10/12/2017	Mass. Ave at South Border Rd	D'Allessandro	Installed drain main (2) 6" DI and CB	30	6"		
Drain	10/30/2017	Mangles St	CRL, Inc	Installed drain main; 7 DMHs; 4 CBs	668	12"		
Drain	10/31/2017	Metcalf St	Rapid Flow	Cleaned & CCTV	374	12", 10"		
Drain	11/1/2017	Bowen Ave	Rapid Flow	Cleaned & CCTV	325	12"		
Drain	11/1/2017	Willis Ave	Rapid Flow	Cleaned & CCTV	483	15"		
Drain	11/20/2017	Morrison St	CRL, Inc	Installed drain main; 4 DMHs; 1 CB	410	12"		
Drain	12/20/2017	Taft St / Guild St	CRL, Inc	Installed drain main; 5 DMHs; 2 CBs	461	12"		
Sewer	4/17/2017	12 Higgins Ave	City	Replaced sewer service section	14	6"		
Sewer	4/17/2017	101 Boston Ave	City	Repaired SMH				
Sewer	4/18/2017	346 Riverside Ave	City	Replaced sewer service section	4	6"		
Sewer	4/22/2017	Sycamore at Riverside Ave	City	Rebuilt SMH				
Sewer	5/27/2017	Governors Ave & Lawrence Rd	City	Replaced sewer main section	15	8"		
Sewer	5/30/2017	23 Winslow Ave	City	Replaced sewer service section	5	6"		
Sewer	5/30/2017	Fellsway - J-002 to MWRA	Rapid Flow	Clean & CCTV	1210' - 10", 79' - 12"	10", 12"		
Sewer	6/14/2017	39 Doonan St	City	Replaced sewer service section	15	6"		

**City of Medford, Massachusetts
2017-2018 Storm Drain and Sewer Repairs**

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April 1, 2017 - March 31, 2018

System	Date	Location	Company	Field Work Completed	Length of Pipe (linear feet)	Size of Pipe	Illicit Discharge Removed	Comments
Sewer	6/27/2017	49 Quincy St	City	Replaced sewer service section	5	6"		
Sewer	6/28/2017	7-9 Navaro Circle	City	Replaced sewer service section	15	6"		
Sewer	7/21/2017	184 Park St	City	Replaced sewer service section	14	6"		
Sewer	8/19/2017	23 Headland Way	City	Replaced sewer service section	18	6"		
Sewer	9/18/2017	Doonan St SMH N-094 N-096	D' Allesandro	Replaced Main Section and Installed New MH	95' - 8"	8"		
Sewer	9/20/2017	Fulton St L-145 L-146	D'Allessandro	Replaced Main Section	134' - 10"	10"		
Sewer	10/14/2017	128 Bonner Ave	City	Installed sewer main section	8	8"		
Sewer	10/27/2017	25 Emerald St	City	Replaced sewer service section	2	6"		
Sewer	10/30/2017	Mangles St	CRL, Inc	Installed sewer main and services	23' (8") - 36' (6")			
Sewer	11/20/2017	Morrison St	CRL, Inc	Replaced sewer services	16	6"		
Sewer	11/20/2017	26 Andrews St	City	Replaced sewer service section	10	6"		
Sewer	11/21/2017	20 Marshall St	City	Replaced sewer service	25	6"		
Sewer	12/20/2017	Taft St / Guild St	CRL, Inc	Replaced sewer main and services	8' (8") 24' (6")			
Sewer	2/3/2018	65 Clark St	City	Repaired SMH				
Sewer	2/28/2018	Gaston Street N-131 - N-135A	Insituform/D'All	CIPP Lining	286'	12"		
Sewer	2/28/2018	Gaston Street N-135A - N-138	Insituform/D'All	CIPP Lining	128'	12"		
Sewer	3/1/2018	Fellsway West N-280 - N-281	Insituform/D'All	CIPP Lining	254'	8"		
Sewer	3/1/2018	Fellsway West N-281 - N-282	Insituform/D'All	CIPP Lining	299'	8"		
Sewer	3/1/2018	Fellsway West N-282 - N-019	Insituform/D'All	CIPP Lining	227'	8"		
Sewer	3/1/2018	Fellsway West N-019 - N-018	Insituform/D'All	CIPP Lining	226'	8"		

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