

Municipality/Organization: Town of Brookline, MA

1075 / P

EPA NPDES Permit Number: MARNEC813

MaDEP Transmittal Number: W-035336

**Annual Report Number
& Reporting Period:** No. 4: March 06-March 07

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Peter M. Ditto, P.E. **Title:** Director of Engineering and Transportation

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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: Richard Kelliher

Title: Town Administrator

Date: 4/12/07

Part II.

II A. Self-Assessment

The Town of Brookline has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions, except Minimum Control Measure (MCM) #3 Illicit Discharge Detection and Elimination (IDDE). Sources of bacterial contamination have been found in Town drains. Currently, the Town is working on an EPA approved IDDE program to reduce sources of bacterial contamination in storm drains. Summary data on the IDDE program is presented in Parts IV and V of this report.

In general, the overall goal for the Town’s stormwater program is to improve the quality of water discharged from storm drains. The Town tracks improvements in water quality through stormwater sampling and inspections of various drains.

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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
1A Revised	Informational Brochures	DPW/Engineering	Distribute brochures Count the number of brochures handed out	Brochures placed at libraries, DPW facilities, and mailed to general public. Est. 10,000 in distribution	Continue to distribute brochures
1B Revised	Town Stormwater Website	DPW/Engineering, IT Dept, and Con Comm	Develop Website Start a counter on the website to track the number of viewers	Maintained Website.	Update Website as needed.
1C Revised	“Infoline”	DPW/Engineering	Set up “Infoline” Personnel have been assigned to handle these calls	Maintained “Infoline”	Continue to handle calls
1D Revised	Stormwater email account	DPW/Engineering	Website has an email account so residents may ask questions Log the number of emails.	Maintained Stormwater email account.	Maintain email account
1E	Posters/Videos in Schools	DPW/Engineering and School Dept.	Education material for schools and libraries	Town has added “Reining in the Storm” at the Public Library.	Update posters and videos as needed.

Revised			Track the number of times the video is checked out.		
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1a. Additions

1D					
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2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
2A	Local Advertisements	DPW/Engineering	Annual Public Service Announcements	handouts placed at public locations (Town Hall and Public Library)	Continue to Distribute handouts
Revised			Count the number of handouts distributed.		
2B	Local Clean-ups	DPW, Con Comm, and local groups	Conduct Annual clean-ups around water resource areas.	DPW, Con Comm, and Local groups conducted annual clean-ups around Muddy River, Halls Pond, and other water resource areas.	Continue annual clean-ups.
Revised			Track the amount of materials cleaned-up (ex. Bags of trash).		
2C	Community “Hotline”	DPW/Engineering	Create “Hotline”	“Hotline” maintained by DPW/Engineering.	Continue to Maintain “Hotline”
Revised			Personnel have been assigned to handle these calls		
2D	Storm Drain Stenciling Program	DPW/Parks and Con Comm	Maintain Storm Drain Stenciling Program	Conducted annual stenciling	Continue stenciling program
Revised			Track number of basins stenciled.		

2a. Additions

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3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
3A	Storm Drain System Map	DPW/Engineering and GIS dept.	Maps have been created	Updated maps	Continue to update GIS maps as needed based on changes and drain system.
Revised					
3B	Illicit Discharge Detection and Elimination (IDDE) Program	DPW/Engineering and Water and Sewer Division	Town has had an aggressive IDDE program for years	Continued to maintain an aggressive IDDE Program. Located and removed 12 Illicit discharges.	Continue to maintain an aggressive IIDDE Program.
Revised			Monitor improvements in water quality		
3C	IDDE Ordinance	DPW/Engineering	Create By-law	Maintained and enforced Storm Water By-law	Continue to maintain and enforce Storm Water By-law.
Revised					
3D	IDDE “Hotline”	DPW/Engineering	Create “Hotline”	“Hotline” maintained by DPW/Engineering.	Continue to Maintain “Hotline” and email account
Revised			Personnel have been assigned to handle these calls		
3E	Revise Sewer and Drain Use Regulations	DPW/Engineering	Revise and Adopt new regulations	DPW/Engineering in the process of revising Sewer and Drain Use Regulations.	Regulate Sewer and Drain use and work with contractors and public to eliminate non-storm water discharges
Revised					
Revised					

3a. Additions

3F	Comprehensive IDDE Plan	DPW/Engineering	Monitor improvements in water quality	Implement Plan	Continue to implement plan
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4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
4A	Site Runoff Control (Erosion and Sediment Control ESC By-law)	DPW/Engineering	Create ESC By-law	Maintained and enforced ESC component of Storm Water By-law.	Continue to maintain and enforce Storm Water By-law.
Revised					
4B	ESC Plan Review	DPW/Engineering	Conduct Plan review after adoption of Storm Water By-law	DPW/Engineering reviewed and approved 14 plans for construction projects	Continue ESC plan review.
Revised			Track number of plans reviewed.		
4C	Construction Inspection	DPW/Engineering	Conduct Inspections	DPW/Engineering inspected 14 construction sites	Continue Construction Site Inspections.
Revised			Track number of inspections.		
4D	“Hotline” for non-compliant construction sites	DPW/Engineering	Create “Hotline”	“Hotline” maintained by DPW/Engineering.	Continue to Maintain “Hotline”
Revised			Personnel have been assigned to handle these calls		
Revised					

4a. Additions

4E	Creation of contractors BMP handbook for construction activities	DPW/Engineering	Create handbook	Drafted Handbook	Issue Handbook
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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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
5A Revised	Post Construction Control By-law	DPW/Engineering	Create By-law	Implemented Post Construction Controls as part of Storm Water By-law	Continue to maintain and enforce Storm Water By-law.
5B Revised	Plan Review	DPW/Engineering and Building Dept.	Conduct Plan Review Track number of plans reviewed.	Coordinated with Building and Planning Department to ensure plan review on all projects. Review 14 plans	Continue Plan Review Process
5C Revised	O&M of Runoff Control Structures/Practices	DPW/Engineering	Incorporate into all plans of Storm Water Management Structures and Practices Track number of sites with O&M practices.	Worked with developers, contractors, engineers, and architects to include O&M into all plans. 14 sites incorporated O&M practices.	Continue to ensure O&M of Storm Water Structures and Practices.
5D Revised	Inspection of Runoff Control Structures/Practices	DPW/Engineering	Conduct Inspections Track number of inspections.	Conducted 14 inspections	Continue inspections.
Revised					
Revised					

5a. Additions

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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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
6A Revised	DPW Employee Training	DPW/Engineering	Conduct Annual Training Track education with a questionnaire.	Met with various Division Personnel (Highway/Sanitation, Water/Sewer, and Parks) to discuss Storm Water issues related to municipal operations.	Continue DPW personnel training and education.
6B Revised	Municipal Maintenance Activities	DPW/Engineering	Conduct Annual Inspection and review operation practices Log inspections and monitor progress on O&M practices	Conducted inspections at DPW facilities. Constructed new DPW materials handling yard 2006-2007 (see Part IV for summary)	Continue inspections
6C Revised	Household Hazardous Waste Collection Program	DPW	Conduct HHP day Track Waste Recovered, recycled, and disposed.	Collected household hazardous Products in the Spring. See Part V for tracking summary.	Continue to maintain waste collection program

6a. Additions

6D	Street Sweeping Program	DPW/Highway	Track tons of sweepings collected.	Conducted Street Sweeping. Documented material collected, transported and disposed (See Part V O&M Section).	Continue Street Sweeping Program
6E	Catch Basin Cleaning Program	DPW/Water and Sewer/Engineering	Track tons cleanings collected.	Cleaned catch basins (See Part V O&M Section).	Continue Catch Basin Cleaning Program.

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

Not Applicable

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year5
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

The following is a summary of information collected and analyzed for Permit Year 4:

Drainage System

- Continued to work aggressively on the Comprehensive IDDE plan. In 2006 the Town removed 12 cross-connections and approximately 3,188 GPD of wastewater flows from the drainage system. Since the inception of the plan 6,862 GPD of wastewater flows have been removed from the drainage system. Based on recent sampling results, the quality of water discharge from the drainage system has improved.
- Working with Boston Water and Sewer Commission to address pollution issues at inter-municipal connections.
- Constructed new DPW materials handling facility. The facility has specially designed containment bins for handling various materials like sand, gravel, and topsoil. Runoff from the facility flows through and oil/water separator, rip rap swale, and a large detention basin.
- Substantially completed closure of Front Landfill. The post-closure use of the landfill is a park. Runoff from the Park is handled through a series of vegetated and rip rap swales. The swales then drain in to two detention basins. Capping and drainage improvements on this site should improve the quality of water discharged to receiving waters in the area.
- Regulated approximately 14 sites from plan development through construction. Each site implemented erosion control practices during construction and onsite retention/detention of stormwater for post-construction.

Pollution Sources

- Bacterial Contamination is the primary source of pollution in the drainage system. The Town has been following an aggressive Illicit Discharge Detection and Elimination (IDDE) Plan to locate and remove these wastewater flows.
- Wash water (laundry connections) is also a source of pollution. These laundry connections are typically tied into a drain line in the basement. This type of connection does not have sanitary hook-up it is only wash water. These laundry connections are more difficult to locate, but are a source of pollution.
- Small construction sites, illicit connections, and illegal discharges appear to be the main sources of pollution to the Town's drainage system. Inspections have helped to reduce the amount of sediment washing off construction sites.

Muddy River Flood Control, Water Quality, and Habitat Enhancement Project

- The Muddy River Project, managed jointly by the Town of Brookline and City of Boston Parks Department, involves improving flood storage, developing and implementing storm water management controls to improve water quality, and enhancing habitat areas along the riverway and associated water bodies. In the past year, The City and the Town have signed a design agreement with the Army Corps of Engineers and the design process has begun. The field survey work and test pit activity has been completed and the Corps is preparing fifty percent design documents for the first portion of the project. This first phase of design will include the new culverts and headwalls at the former Sears parking lot as

well as the daylighting sections of the Muddy River. The 100% design of this portion of the project is expected to be complete in August of 2007.

Funding

- Available Budget for Capital Improvement Projects (CIP) = approx. \$1,000,000 for Drainage Improvements.
- Operations, Maintenance, and Management (See Part V)

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Storm water management position created/staffed – Town created and staffed Environmental Engineer and Civil Engineer	(y/n)	Y
Estimated Annual program budget/expenditures	(\$)	
Catch Basin Cleaning/Drain Maintenance (Personnel, equipment, and maintenance)		\$155,000.00
Street Sweeping (Personnel, equipment, and maintenance)		\$425,000.00
DPW/Engineering (Program Management-Personnel and equipment)		\$120,000.00
Annual Cleaning of 2-Oil/Sediment/Water Separators – does not include installation (approx. \$120K/unit)		\$5,000.00
Household Hazardous Waste Collection, Transport, and Disposal		\$32,937.00
Total Storm Water Management Program Expenditures (Note: Does not include CIP)		\$737,937.00

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	10,000
Stormwater management committee established	(y/n)	N
Stream teams established or supported (6 different “Friends Groups” associated with waters resource areas in and around Brookline)	(# or y/n)	6
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	1
▪ community participation	(%)	698

<ul style="list-style-type: none"> material collected (type of waste collected: Pesticides, Bug sprays, Cathode Ray Tubes (CRTs or TVs), Rodent poisons, Paint thinner, Urethanes, Oil or enamel based paints, Weed killers, Concentrated fertilizers, Cleaning solvents, Caustic cleaners, Photo chemicals, Antifreeze, Kerosene, Diesel oil, Aerosol cans, Waste motor oil, Auto and household batteries, Fluorescent bulbs, Tires, and Propane tanks 	(tons or gal)	3,885 gallons liquid waste
Tires	404	
Propane Tanks	156	
Automobile Batteries	85	
Fluorescent Bulbs (2/4/8 ft)	9736 ft	
Batteries (mercury, lithium ion, lead acid, alkaline)	10 gallons	
School curricula implemented (Note: videos placed in schools and public libraries)	(y/n)	See Note

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	Adopted
Regulatory Mechanism Status (indicate with "X")				
<ul style="list-style-type: none"> Illicit Discharge Detection & Elimination 				X
<ul style="list-style-type: none"> Erosion & Sediment Control 				X
<ul style="list-style-type: none"> Post-Development Stormwater Management 				X
Accompanying Regulation Status (indicate with "X")				
<ul style="list-style-type: none"> Illicit Discharge Detection & Elimination 				X
<ul style="list-style-type: none"> Erosion & Sediment Control 				X
<ul style="list-style-type: none"> Post-Development Stormwater Management 				X

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	10
System-Wide mapping complete	(%)	100
Mapping method(s)		
<ul style="list-style-type: none"> Paper/Mylar (Drainage System Range Plans) 	(%)	95
<ul style="list-style-type: none"> CADD (as-builts from new projects) 	(%)	5-10
<ul style="list-style-type: none"> GIS (Drain and sewer mains and service connections) 	(%)	98
Outfalls inspected/screened (Visual Inspections of each outfall during dry and wet weather conditions – estimated observations per outfall = 10)	(# or %)	10
Illicit/Illegal discharges identified (found under IDDE plan)	(#)	12
Illicit/Illegal connections/discharges removed = # Cross-connections removed	(#)	12
	(est. gpd)	3,188 GPD
% of population on sewer	(%)	99.9

Number of houses with septic systems	(#)	29
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Construction

Estimated Number of construction starts (>1-acre)	(#)	3
Estimated percentage of construction starts adequately regulated for erosion and sediment control (Sites regulated by new Town by-law)	(%)	95
site inspections (multiple visits per site)	(# or %)	14 sites
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and \$)	0
Estimated Complaints/concerns received from public	(#)	10

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control (Note: Sites currently under construction)	(%)	95
Site inspections completed (14 Sites, 2 inspections per site = est. 28)	(# or %)	28
Estimated volume of stormwater recharged (Note: No info available)	(gpy)	

Operations and Maintenance

Average frequency of catch basin inspection and/or cleaning (non-commercial/non-arterial streets)	(times/yr)	1/yr
Average frequency of catch basin inspection and/or cleaning (commercial/arterial or other critical streets)	(times/yr)	2/yr
Total number of structures cleaned (Approximate)	(#)	1,426
Storm drain cleaned (Note: Drain lines are cleaned as needed)	(LF or mi.)	See Note
Qty. of screenings/debris removed from storm sewer infrastructure Catch Basin Cleanings	(lbs. or tons)	1,747 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		Landfill
Est. Cost of catch basin cleanings disposal	(\$)	\$50,000

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	Once a week
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	Every Night
Qty. of sand/debris collected by sweeping (Note: Approximately 10,323 lane miles swept)	(lbs. or tons)	1,119 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Landfill
Cost of sweepings disposal	(\$)	\$26,500
Vacuum street sweepers purchased/leased (Own and operate)	(#)	4
Vacuum street sweepers specified in contracts	(y/n)	N

Reduction in application on public land of: (“N/A” = not used; “100%” = elimination)		
▪ Fertilizers (Note: Park Division uses approx. 9000 lbs/yr on athletic fields)	(lbs. or %)	0 (See Note)
▪ Herbicides	(lbs. or %)	N/A
▪ Pesticides	(lbs. or %)	N/A
Anti-/De-Icing products and ratios (Note: An estimated 3,275 tons of salt (NaCL) and 1,072 tons of sand mix were applied during the winter season. Fourteen trucks conduct the de-icing operations. All trucks are automated to dispense 200 pounds of sand/salt mixture per lane mile. Sand to salt ratio 7:1)	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	See Note
Pre-wetting techniques utilized	(y/n)	N
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	Y
Estimated net reduction in typical year salt application	(lbs. or %)	0
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction (Note: New DPW materials handling facility should be constructed by Summer 2007 will include covered material storage bins and storm water management facilities ex. Oil/sediment separators and detention basins.)	(y/n)	See Note

Part VI. Discussion of activities for the next reporting cycle

The following is a discussion of activities planned for the next reporting cycle:

- Continue to maintain an aggressive IDDE program,
- continue funding Storm Water Program management, maintenance, operations, and CIP,
- work on educating the general public and Town staff of storm water issues,
- finish construction of new DPW Materials Handling Facility and capping of Front Landfill. Both projects should be complete by Summer 2007,
- and continue to implement best management practices (drainage swales, onsite retention/detention, and other water quality improvement work) on Town projects.