TOWN OF WATERTOWN

DEPARTMENT OF PUBLIC WORKS
124 ORCHARD STREET
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30 April 2008

Ms. Ann Herrick, CIP
U.S. Environmental Protection Agency Region 1
One Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023

Reference: NPDES Phase II Annual Report
Town of Watertown (MAR041083)

Dear Ms. Herrick:

The Town of Watertown is pleased to submit the enclosed NPDES Phase II MS4 Annual Report (Permit #MAR041083) for Permit Year 5. The Annual Report has been signed and certified by Town Manager Michael J. Driscoll in accordance with the signatory criteria of the general permit.

We welcome any comments or questions you may have on the Annual Report for Permit Year 5. Please feel free to contact me at 617.972.6420.

Thank you.

Sincerely,

Gerald S. Mee, Jr.
Superintendent of Public Works

Enclosure

C: Michael Driscoll, Town Manager
Christopher Hayward, Watertown Conservation Agent
Mark R. Reich, KOPELMAN AND PAIGE, P.C.
John E. Murphy, Stantec
Paul H. Blinco, Hydraulic Engineering Services

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Municipality/Organization: Town of Watertown

EPA NPDES Permit Number: MAR041083

MaDEP Transmittal Number: **W-131118**

Annual Report Number & Reporting Period: **No. 5: April 2007-March 2008**

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Gerald S. Mee, Jr. Title: Superintendent of Public Works

Telephone #: 617.972.6420 Email: c/o stamber@ci.watertown.ma.us

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: Michael J. Driscoll

Title: Town Manager

Date: 30 April 2008

Part II. Self-Assessment

Watertown has made significant strides over the past year toward meeting its goals pursuant to the Phase II NPDES Permit BMPs as outlined below:

Public Education and Outreach

Watertown has developed and implemented public education and outreach on environmental issues in general and stormwater in particular through a number of programs and awareness campaigns. Watertown continued promoting and supporting the initiatives for educating the public on the impacts of activities on stormwater quality and mitigative measures to protect water quality. The premier forum for public education and outreach each year is the annual Faire on the Square that attracts up to 15,000 people where the Town's color brochures "Protecting our Waterways" and "Reducing I&I are widely distributed, large displays of the drainage and sanitary sewer systems are presented for people to review and ask questions, and special events focusing on the environment are held with local community groups, environmental advocates and vendors promoting awareness of products and methods for reducing impacts to the environment and water quality. The High School Science Department took an active role in educating students on urban ecology and conducting field experiments to analyze water quality.

The Town continued to enforce the Animal Control Ordinance for pet waste management through issuance of warnings and fines to violators by the Board of Health and the Animal Control Officer. The Board of Health also kept up with performing routine inspections of restaurants to verify the presence and proper operation of the grease traps and disposal of grease. Environmental awareness in Watertown has increased greatly during the past year. Employees and citizens are strengthening existing programs and devising new programs from stormwater management and awareness at the high school to recycling in the elementary schools. Members of the Environment and Energy Efficiency Committee have continued working with Town employees on plans for the construction of our new Police Station. The Department of Public Works introduced a program for the sale of rain barrels and held a workshop on environmentally friendly lawn care through a grant from the Massachusetts Department of Environmental Protection . The DPW and Conservation Agent strengthened their collaboration in areas of shared jurisdiction.

Public Involvement and Participation

The DPW met frequently with the Conservation Agent and issues of stormwater management and protection continue to be on the shared agenda. One formal meeting and numerous informal meetings were conducted between the DPW and Conservation Commission during Permit Year 5 to discuss a variety of water quality and stormwater issues including construction sites and drainage outfalls. Public participation in the annual spring river clean-up day was encouraged by publicity and supported by DPW personnel, equipment and supplies. The DPW is continuing and building its partnership with the Environment and Energy Efficiency Committee. The DPW also supported volunteers and local community groups involved in river clean-up activities with supplies and staff resources. The DPW also supported activities of the Watertown Citizens for Environmental Safety, a grass roots group that promotes environmental awareness through development and distribution of information to the public and businesses in Town. The DPW conducted its on-going riverwatch program to inspect the bank of the Charles River for signs of dumping and pollution and to keep the outfalls free and clear of debris.

The Household Hazardous Waste Collection program continued to be a success in Permit Year 5 with over 150 vehicles participating during 8 separate collection days. Catch basin stenciling also continued the past year through a cooperative effort between the DPW and Watertown Middle School students who labeled around 75 CBs with durable plastic adhesive backed labels.
Water quality monitoring remained a high priority over the past year with a total of 81 water samples taken at the Town's stormwater outfalls over 4 quarterly sampling periods. In addition to sampling at outfalls, water quality samples of stormwater runoff were also collected and analyzed at ten (10) locations throughout the Town at entrances to catch basins for the purposes of gaining a better understanding of the impacts of urban runoff on stormwater contamination.

As noted above, the DPW conducted its first rain barrel distribution program on 25 april 2007 that was advertised through the local newspaper and cable TV. The DPW continued this program in the Spring of Permit Year 6 promoting the benefits of rain barrel usage for capturing roof runoff and providing rain barrels at a nominal fee to local residents. The next rain barrel sale event is scheduled for 1 May 2008.

Illicit Discharge Detection and Elimination

The IDDE Program activities stepped up this past year with an aggressive schedule to complete the top-down inspection and testing of the entire MS4 system 3 years. Over the past year 88 out of 172 key junction manholes (51%) plus 27 upstream tributary manholes associated with approximately 148,000 linear feet of storm drain (representing over 41 percent of the entire MS4 system) were inspected and tested for the presence of illicit connections indicator parameters. A total of 89 drain manholes were sandbagged and monitored for contaminated flow under dry weather conditions. As a result, 43 dye tests were performed to confirm the locations of illicit connections resulting in 1 confirmed illicit connection being identified and removed.

Enacting protocols in its IDDE program, the Town added wet weather testing to its water quality monitoring this past year. Refinements are being made to GIS mapping of the Town's storm drain, sewer and water systems that were completed in 2005.

Through the MWRA Local I/I Financial Assistance Program, almost 12,000 linear feet of sewers were TV inspected this past year to look for defects and deficiencies including possible indirect communication between the sewer and nearby storm drain. The DPW, with its sewer consultant, has developed construction plans to replace or rehabilitate over 3,000 linear feet of defective sewers identified by TV inspection which will reduce I/I and the potential for inter-communication with nearby storm drains.

Construction Site Stormwater Runoff Control

The DPW in cooperation with the Planning Department and Conservation Commission continues its efforts to draft an update to the Town ordinances requiring the implementation of erosion and sediment controls at construction sites. The DPW is responsible for reviewing site development plans prior to Site Plan Approval by the Planning Board and ensuring that the proper measures are incorporated for controlling erosion and sediment runoff to the Town's stormwater system and waterways. Developers and land owners seeking new construction permits are provided a set of the Town's standard site construction details including erosion and sediment control requirements. The DPW performs inspections of the construction sites exceeding one acre to ensure compliance with the stormwater runoff control requirements. The DPW also enforces its parking lot drainage standard of using oil/gas separators for areas with 4 or more parking spaces. The DPW requires new construction sites to post a copy of their Construction Permit in a

conspicuous location for easy reference by the public. The permit sign includes the phone number of the DPW for the public to report complaints of erosion and sedimentation, litter or other contaminants from the site reaching public ways. The DPW recorded these complaints, performed a follow-up site inspection and required the construction company to immediately address the violations.

Post-Construction Stormwater Management in New Development and Redevelopment

The DPW is working cooperatively with the Planning Department and Conservation Commission to draft an ordinance by Spring 2009 requiring implementation of post-construction runoff controls and long-term operation and maintenance of stormwater controls. The draft ordinance will include references to non-structural and structural Best Management Practices (BMPs) for post construction runoff control of projects exceeding one acre in size.

Pollution Prevention and Good Housekeeping in Municipal Operations

The DPW continued its extensive list of activities for stormwater pollution prevention. Each of the Town's 27 outfalls were inspected at least once during the permit year to review its condition and appropriate steps were taken to remove blockages, clean-up debris and maintain its full function. The townwide bi-annual catch basin cleaning program continued during the permit year with 100% of the 3,700 CBs cleaned. The DPW's two street sweepers were used to sweep all the Town's streets at least once during the permit year for removal of salt residue, sand, debris, leaves and litter before entry into the storm drain system. The DPW continued maintenance of the stormwater system focusing on problem locations where blockages and flooding have occurred.

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 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
1A	Distribute public education brochures	DPW, Health Dept.	1 brochure each permit year	Brochures distributed at Earth Day 2007 Charles River Clean-up event held on 21 April 2007 and Annual Faire on the Square on 29 September 2007. Brochures have been placed in display racks at Town facilities including DPW Office, Town Hall, Libraries, and Schools. The DPW continued to support the public education work of the Environment and Energy Efficiency Committee	Continue distribution and displaying of "Protecting Our Waterways" and "Reducing I&I" brochures. Print additional brochures as needed to maintain adequate supply for distribution at annual environmental events and for posting at DPW and Town building venues. Distribute brochures at the annual river clean-up program scheduled for 26 April 2008 and Faire on the Square scheduled for 27 September 2008.
Revised			Develop, print and distribute brochures in 2007.		
1B	Participate in municipal services exhibit at local mall	DPW	1 day per permit year	The Department participated in the annual Faire on The Square on Sat. Sept. 29, 2007 with an estimated 12-15,000 people to inform the public what services the DPW provides including protection of the river through stormwater management. The stormwater brochure was distributed and a color copy of the Town's GIS map of the stormwater system was displayed for educating people on the connection between runoff in their neighborhood and impacts to the Charles River and tributary waster ways. An environmental fair inside Faire on the Square took place to focus on environmental issues. Vendors, local community groups and committees interested in environmental issues were invited to promote awareness of their specialties and building connections amongst the different environmental groups.	Distribute stormwater brochures and display the Town's GIS map of the stormwater system at the annual Fall, "Faire on The Square" event scheduled for Sept. 27, 2008. A table and display board will be set up along the sidewalk in Watertown Square where passersby can obtain public education materials, view the Town's stormwater map and learn what steps they can take to reduce impacts on stormwater runoff. DPW officials will be present to address questions and comments made by the public.
Revised	*The Town's annual Faire on the Square is effectively a municipal services day.*				

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
1C	Send stormwater information and work with science depts..	DPW/public schools	Continue meetings and discussions with High School Science Dept. for enhancing curriculum for understanding of impacts to public waterways and measures for stormwater pollution prevention. Fully implement program by Fall 2008.	DPW staff has communicated with several School Dept. staff members to plan steps and content of school curriculum. The High School Science Department carried over from the previous year a field studies program developed with an organization named "Urban Ecology Institute" at Boston College. The High School Science Dept. used what they learned from the training to teach students about urban runoff and water quality impacts and hands-on demonstrations on how to conduct water quality tests for pH and nutrients.	Continue to work with the High School Science Dept. regarding stormwater pollution control education in the coursework. The goal is to have stormwater pollution control be a part of the science department curriculum for 9th and 10th graders and to have high school students who have received the stormwater pollution control education teach younger students at the Middle School level.
Revised			Continue meetings and discussions with High School Science Dept. for enhancing curriculum for understanding of impacts to public waterways and measures for stormwater pollution prevention.		
1D	Outfall Signs	DPW/Community Groups	Label all outfalls with signs	All but 2 of the Town's 27 outfalls have been labeled with permanent signs identifying the outfall ID number and providing a telephone number for the public to report suspicious discharges. The 2 unlabeled outfalls are those that coincide with the Dept. of Conservation and Recreation (DCR) boardwalk along the Charles River due to objections of the signage aesthetics by DCR. The Town is still working with DCR.	Complete labeling of all outfalls. The Town will continue to work with DCR to resolve the placement of the two outfall signs on their boardwalk. As a result of damage by weather and vandalism, there is an ongoing effort to replace damaged outfall signs.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
1E	Pet Waste Management	Health Dept., DPW and citizens	Enforcement of pet waste rules through issuance of fines by Bd. of Health or Police Verify enforcement by number of citations issued each permit year.	The Town's current Animal Control Ordinance requires pet owners to leach, curb and clean up after pets. Pet waste education included Health Dept. brochures on requirements for pet waste management as well as information contained in DPW's "Protecting Our Waterways' brochure. Enforcement of pet waste management rules stepped up this year through routine inspections of public park areas by Animal Control Officer and issuance of citations. Pet Waste Management for riverfront areas are beyond Watertown's jurisdiction and the Town relies upon DCR to enforce this BMP in these public areas.	Continuation and expansion of public education and enforcement activities. The DPW published "Protecting Our Waterways" brochure includes a section on pet waste management and will be distributed to the public and pet owners at town sponsored events and public displays.
1F	Education of restaurant owners and auto service garage owners	DPW/Board of Health	Visit and provide educational materials on preventing stormwater pollution. Target is to meet with 33% of the restaurant and garage owners each permit year for 3 remaining permit years.	In permit Year 5, the Board of Health has visited **117** area restaurants to inspect for presence of grease traps and to provide information on proper grease trap maintenance. Due to mandatory reporting requirements to inspect twice a year the number of routine inspections including the grease trap inspection/ education conducted at the 117 restaurants was 234. During the inspections, the owners were asked by the Health Dept. inspector about their grease disposal practices and, if requested, provided a list of vendors who offer disposal service.	Provide information to restaurants on impacts of grease disposal in storm drains and to automotive service garages on impacts of improper handling and disposal of oil and coolant wastes.

1a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
1G	Public education through environmental speaker series	DPW and Environment and Energy Efficiency Committee	Three to five annual speakers or movies on environmental topics	This was the third year of the speaker series. A workshop of Environmentally Friendly Lawn Care was held on 2 May 2007 and a presentation on "Clean Air Lawn Care" was made on 30 May 2007.	DPW and Environment and Energy Efficiency Committee will continue to promote public awareness and education through the speaker series on a variety of environmental topics including those related to stormwater, water quality and other environmental issues. The movie "Renewal" will be shown at the Library on 1 May 2008.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
2A	Public stormwater meetings	DPW, Planning Bd., Con. Comm.	1 meeting per permit year with Con. Comm., Planning Bd., Bd. of Health & DPW	DPW met regularly with the Conservation Agent regarding stormwater topics. Numerous informal meetings between DPW and Conservation Commission were held during the permit year on and a formal meeting took place in March 2008 to discuss a variety of water quality and stormwater issues such as conditions at the Town's outfalls along Pleasant Street, steps to reduce stormwater related pollution, and measures that can be implemented to improve public education on the issue.	Conduct both formal and informal meetings on stormwater issues between DPW and Con. Comm. throughout the year to review progress on initiatives to reduce impacts of runoff on waterways, measures to improve public education and awareness on the issue, setting of appropriate stormwater erosion and sediment control requirements in Orders of Condition issued to developers, and identification of priority areas for community clean-up events. Notices of the formal meetings will be posted at the Town Hall and Libraries, and included in the local newspaper in an effort to encourage public attendance at the meeting.
2B	Community Clean Up	DPW/volunteers	1 clean up day per year. Participation by at least 100 volunteers	At this point we cannot document that a formal community clean-up event was organized in Permit Year 5 beyond the River Clean-up event noted below. We will continue to seek contacts to provide confirmation.	Continue to support annual community clean up day. Publish article in local paper and invite public to participate.
Revised	*Participate in/support of community clean up*	DPW supports community clean up	Support 1 clean up day per year. Aim for participation by at least 50 volunteers		
2C	River Clean Up	DPW	1 clean up day per year. Participation by general public and local community groups.	Annual spring clean up conducted on 21 April 2007 in the Solomon Park area of Charles River. DPW supplied barrels and truck. Arranges for removal of debris collected. The River Watch program was conducted in conjunction with the river clean up.	Conduct review clean up day. Work with volunteers and other participants on a variety of activities aimed at improving environmental quality, river water quality being one of them. The Town is proposing that students assist with clean up and removal of items to prevent entry into the storm drain system as part of satisfying community service obligations. The River clean-up for Permit Year 6 took place on 26 April 2008.
Revised	Community Clean Up	DPW supports river clean up			

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
2D Revised *Further revised*	Citizen Watch Group	Citizens, DPW	2 meetings per year with WCES and participation by at least one volunteer from each neighborhood to perform weekly inspections of neighborhood areas and report to local authorities incidents of pollution. ---------- 2 meetings per year with WCES, one with the Recycling committee and one with the Environment and Energy Efficiency Committee. .Aim for 1 clean up day per year. Participation by general public and local community groups.	DPW continued working with Watertown Citizens for Environmental Safety (WCES), a grass roots group that promotes environmental awareness through development and distribution of information to the public and businesses in Town. WCES has published a pesticide awareness brochures/pamphlet in conjunction with the Board of Health. DPW met extensively with neighborhood groups regarding maintenance of planting strips The Environment and Energy Efficiency Committee continued to distribute public education materials for general public and business community and continues to work with the Town to incorporate green building practices in the construction of the new Police Station. The Committee planned and conducted an Environmental Fair within the annual Faire on the Square event. The Town Bicycle Committee and Recycling Committees also continued to promote environmentally friendly activities that have positive impacts on the river.	The Town will continue to work with WCES, Bicycling, Recycling, Environment and Energy Efficiency Committees. The DPW intends to meet with the WCES twice per year (Spring and Fall) to review topics of environmental interest and to seek participation to support and promote Town initiatives. The DPW will continue to work with the student volunteers of Roots and Shoots. This year's Faire on the Square will again feature an environmental section under the auspices of the Environment and Energy Efficiency Committee.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
2E	Riverwatch program	DPW	2 times per permit year	DPW conducted Riverwatch Program during the river clean-up day on 21 April 2007 to inspect the river bank areas and outfalls for signs of pollution and dumping of debris. Inspection of the outfalls and waterway is by use of the DPW's boat which was taken out during the river clean-up event. The bank areas were each quarterly period the outfalls are sampled for water quality which were 4 occasions during permit year 5.	Continue Riverwatch Program with 2 inspections performed in Permit year 6.
2F	Household Hazardous Waste Day. The Town is a member of the Minuteman Household Hazardous Waste Collection Location	Health Dept.	8-10 events per year	There are eight events in any given year. Watertown residents sent 154 cars to Household Hazardous Waste events from 28 April 2007- to 3 November 2007.	Continue HHW Program in conjunction with Minuteman Household Hazardous Waste Collection Days.

2a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
2G	CB Stenciling Program	DPW/Volunteers	Stencil 25% of key CBs in Town each year over 4 years	Labelling of Town catch basins was conducted through a cooperative effort with the Watertown Middle School students. Approximately 75 key catch basins were labeled under the program in Permit Year 5 in late Spring 2007. DPW provided durable plastic adhesive backed labels worded "Do Not Dump – Drains to River". The labels were placed on the top of the curb immediately behind the CB. DPW oversaw CB labeling program providing the necessary materials and instructions on proper installation by the volunteer group.	As noted under the Public Education Minimum Control Measure #1, Watertown implemented a catch basin labeling program in Permit Year 5 and will continue to support the efforts of volunteers seeking to participate in this program in Permit Year 6.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
2H	Water Quality Monitoring Program	DPW/Environmental Community Groups/Volunteers	Conduct Water Quality Monitoring quarterly of waterways known to have high bacterial counts.	DPW routinely sampled and analyzed water quality from drainage outfalls to identify signs of illicit connections and to take measures to remove the sources from the storm drains. A total of 81 water quality samples were taken at the MS4 outfalls and in-system locations and sent to the lab for analysis during Permit Year 5 including 37 samples under wet weather conditions.	Continue and further refine water quality monitoring program.
2I	Adopt a Storm Drain Program	DPW/Environmental Community Groups/Volunteers	Participation by 15-20 Adopt a Storm Drain volunteers each year.	Due a lack of general interest by the public, the Town was unable to draw up support for the proposed Adopt a Storm Drain Program.	The Town will continue its efforts to enlist volunteers for the upcoming permit year to launch the Adopt a Storm Drain program in Watertown.
2J	Rain Barrel Distribution	DPW	Distribute rain barrels for purchase by Watertown residents.	Held rain barrel distribution event on April 25, 2007.	The Town will again sell rain barrels on 1 Mary 2008 and will continue promoting benefits of rain barrel usage for capturing roof runoff to reduce runoff from paved surfaces and lawn areas reaching the storm drain system and waterways. Aim to hold additional rain barrel distribution event in early Spring 2009
2K	Healthy Lawns and Landscapes Workshop	DPW	Conduct a workshop on lawn and landscape maintenance measures that reduce impacts to the Town's waterways.	Healthy Lawns and Landscapes Workshop was held 2 May 2007. Anne McGovern at DEP to conducted the workshop.	Continue to promote healthy lawn and landscape practices. Although the lawn care workshop in 2007 was believed successful, it was below the preferred participation threshold of 30 people and the Town decided not to apply for the workshop for this year.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
3A	Work with private consultants	Coordinate with DPW	Perform top down investigation of entire MS4 to detect illicit connections within 3 years Eliminate identified illicit connections within 3 months of detection. Most illicit discharge sources detected and eliminated within 5 years	The Department of Public Works has conducted an extremely active program since 1997, has continued its routine monitoring of outfalls and hot spots to locate the presence of illicit connections. A total of 88 out of 172 key junction manholes were inspected and monitored for illicit connections in Permit Year 5. In addition, 27 supplemental drain manholes upstream of the key junction manholes were inspected and monitored for the presence of illicit connections. Key Junction Manholes identified in the Illicit Discharge Detection and Elimination program were opened, inspected and sampled for the presence of indicator parameters. Manholes with positive findings were traced upstream to locate the source of the illicit connection. One (1) illicit connection was discovered and 1 connection eliminated. Through April 2008, approximately 148,000 lf (41%) of the MS4 has been inspected and tested following the IDDE top-down protocol.	Implement Updated IDDE Plan with the top down approach for at least an additional 1/3 of entire MS4.
3B	Work with various Town agencies	Building, FD, Con. Comm, DPW	Training of public employees on illicit discharges completed within one year	The DPW coordinated with the Health Department about improper waste disposal issues and possible impacts to MS4 and water bodies. Public employees are being provided copies of the brochure "Protecting Our Waterways" which includes a discussion of illicit connections and their serious impact to the environment.	Continue joint efforts of DPW, Building Department and other Town Depts. and Agencies regarding the serious nature of illicit connections and to be continually on the lookout while working around Town for incidents of illicit discharges so they can be promptly addressed.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
3C	Update Stormwater Map	DPW/Consultants	Update map each year during permit period as new information becomes available. Complete supplemental info. Mapping by 2007.	Mapping of Town's MS4, sanitary sewer, and water systems was completed in the Townwide GIS System in 2005. As new information from field investigations during Permit Year 5 became available, it was compiled and used for updating the Stormwater Map.	Continue updating mapping with IDDE investigation results. Incorporate the other features, to the degree the information is available, recommended by the Center for Watershed Protection.
3C Revised			Update map each year during permit period as new information becomes available.		
3D	TV, smoke and dye testing	DPW/Consultants		TV inspected 11,771 linear feet of piping and dye tested 43 suspect illicit connections. In conjunction with the MWRA's Local I/I Financial Assistance Program, the DPW worked with Consultants to arrange for TV inspection of sewers in areas known to have significant infiltration and physical problems.	Based on results from top down investigations, perform TV, smoke and dye testing to pinpoint illicit sources.
3E	Remove dry weather overflows	DPW/Consultants	Eliminate dry weather overflows within 1 year	The Department has an active program including work with outside consulting firms to inspect and test its MS4 looking for sources of dry weather flow and determining if it is from an illicit source. Investigations identified 1 suspect location which was repaired.	Use information gained from the top down approach to follow-up investigations to identify illicit sources and have them removed immediately.

3a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
3F	IDDE Educational Outreach	DPW/Health Dept./Con. Comm./Volunteers	Include IDDE Education with public education goals under BMP #1.	The DPW published and distributed the "Protecting Our Waterways" brochure to the public at Town sponsored community events and posted in public forums. The brochure includes the topic of illicit discharges. The DPW coordinated with the High School science department on urban water quality issues and students are learning about causes of water pollution. The DPW worked with volunteers and Middle School students to conduct labeling of CBs around Town with the words "Drains to River"	The IDDE outreach program will continue for permit year 6 and will include the following components: • Distribution of stormwater brochures developed under BMP #1A at Town events and make available within municipal buildings to employees and the public. • Continue collaboration with the volunteer groups for river watch and community clean-up programs. • Continue meeting with restaurant owners and auto service garages as indicated under BMP #1F to review with methods to prevent illicit discharges from reaching the stormwater system and procedures for proper disposal of wastes from their operations. The goal for this activity is to conduct outreach to these businesses in Watertown over a 3 year period. • Enlisting volunteers to stencil catch basins throughout the Town as noted under new BMP #2G. • Completion of labeling of outfalls under BMP #1D with contact information and phone numbers for the public to report suspicious or confirmed illicit discharges.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
3G	Prohibition of Illicit Discharges	DPW	Since 1990, town regulations "Sanitary Sewer and Storm Drain Regulations" have forbidden improper discharges to the storm drains. Supplant existing Storm Drain and Sanitary Sewer Regulations with more specific language regarding prohibition of Illicit Discharges to the MS4. Draft supplanting Illicit Discharge text for Town Council approval by 2009.	Regulatory language supports and strengthens Town programs and requirements of developers. The Town reviewed current ordinances and Storm Drain and Sanitary Sewer Regulations to determine conformity and consistency with EPA standard Illicit Discharge Prohibition ordinance language.	DPW will continue efforts to strengthen existing regulatory language to incorporate by reference supplanting text on prohibition of all non-stormwater discharges into the Town's MS4 (i.e., Illicit Discharges) in accordance with provisions of the Clean Water Act as required by the US Environmental Protection Agency.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
4A	Update Town Ordinances	DPW, Planning, Con. Comm.	Update ordinance by the end of 2006 and adopt by end of 2007.	The Department of Public Works continued its efforts to form a subcommittee to undertake update. The DPW and Con. Comm. met to work on aligning requirements for stormwater runoff control in Orders of Conditions and projects outside the Wetlands Protection Act jurisdiction.	Use the Stormwater Center model and sample ordinances to draft an ordinance requiring erosion and sediment controls be in place at all construction sites of one acre or greater prior to start of site work in accordance with the NPDES General Permit condition in Part II.B.4.(a). Present the draft ordinance to the City Council for adoption with implementing regulations by the end of May 2009.
Revised			Update ordinance by the May 2009 and adopt by end of 2010.		
4B	Coordinate construction reviews and site inspections	DPW, Planning, Con. Comm.	Internal review and 1 site inspection per project with 100% compliance with sediment and erosion controls by site operators.	Relevant Departments review and inspect projects more than once. All relevant DPW divisions are included in review process. Sites of over one acre were inspected by the Town.	Continue review of plans of new site development. Pay special attention to the plans and details provided by the developer for controlling erosion and sediment runoff that could lead to impacts to the Town's stormwater system and waterways. Conduct a site inspection after the erosion and sediment control measures are installed, as appropriate, for each new construction project of one acre or larger to ensure consistency with local requirements.
Revised					

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
4C	Standard Construction Details	DPW, Planning, Con. Comm.	Update details 1 time during permit period. Require 100% of the projects with areas of 1 acre or more to include in their plans the necessary measures to adequately control erosion and sedimentation in stormwater runoff that meet or exceed those in the Town's standards and the MA DEP Stormwater Management Policy performance standards, whichever is more stringent.	Distributed set of standard site construction details and erosion and sediment control details to developers, site construction contractors, and private property owners.	Review details and update as needed. Provide developers with standard details and review plans and site conditions for compliance.
Revised					
4D	Standard Erosion Control Details	DPW, Planning, Con. Comm.	Update details 1 time during permit period. Require 100% of the projects with areas of 1 acre or more to include in their plans the necessary measures to adequately control erosion and sedimentation in stormwater runoff that meet or exceed those in the Town's standards and the MA DEP Stormwater Management Policy performance standards, whichever is more stringent.	Distributed set of standard site construction details and erosion and sediment control details to developers, site construction contractors, and private property owners.	Review details and update as needed. Provide developers with standard details and review plans and site conditions for compliance.
Revised					

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
4E	Oil/gas separators for areas greater than 4 parking spaces.	DPW	100% of all new construction sites with plans for 4 or more parking spaces to include oil/gas separators.	Require new projects connected to Town drain system to have separators installed during new or renovation work.	Continue enforcement of oil/gas separator installation at sites with 4 or more parking spaces at 100% of new sites connected to Town drain system.
Revised					
Revised					

4a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
4F	DPW Construction Standards	DPW	Enacted in 2002, project proponents appearing before DPW must comply with provisions. Require 100% of the projects with areas of 1 acre or more to include in their plans the necessary measures to adequately control erosion and sedimentation in stormwater runoff that meet or exceed those in the Town's standards and the MA DEP Stormwater Management Policy performance standards, whichever is more stringent.	Distributed set of standard site construction details and erosion and sediment control details to developers, site construction contractors, and private property owners.	Review details and update as needed. Provide developers with standard details and review plans and site conditions for compliance.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
4G	Public observation and reporting	DPW/Board of Health	Implement procedures for receipt and follow-up of public comments on construction site violations of the Town's standards for erosion and sediment control by the end of 2007.	DPW followed up on reports and complaints by the Public on problems observed at construction sites including erosion and sediment in runoff, litter or other contaminants reaching the public ways. DPW notified construction site owner of problems and required they be immediately addressed.	Continue requiring construction site operators with sites exceeding one acre or more to post a sign at the site providing the phone number and address for the public to contact the DPW to report any concerns or questions regarding construction activities and impacts to stormwater quality. Calls made or correspondence written to the DPW by the public will be tracked in a written log noting the location of the project, date of the contact, and nature of the concern or comment made by the public. As appropriate, the DPW or other local authority will follow-up with a site inspection to review construction conditions and speak to the site inspector.

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 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
5A	Update Town Ordinances	DPW, Planning, Con. Comm.	Draft an ordinance by the spring of 2008 requiring the implementation of post construction runoff controls and long-term operation and maintenance of such controls. The goal for the approval of this ordinance by the Town and its adoption is by the end of 2008.	In Progress	Use the Stormwater Center model and sample ordinances to draft an ordinance requiring post-construction runoff control at developed and redeveloped parcels in accordance with the NPDES General Permit conditions in Part II.B.5.(a). Present the draft ordinance to the Town Council for adoption with implementing regulations by the May 2009.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
5A Revised			Draft an ordinance by the spring of 2009 requiring the implementation of post construction runoff controls and long-term operation and maintenance of such controls. The goal for the approval of this ordinance by the Town and its adoption is by the end of 2009.		
5B	Update BMP's and details	DPW, Planning, Con. Comm.	Reduce the percentage of impervious surfaces associated with new developments and redevelopment projects of one acre and above to 25% of the site or less. Reduce sedimentation in stormwater runoff and local water bodies downstream of the development as determined from routine observations.	In Progress	Continue to work on strategies for post construction runoff control of projects exceeding one or more acres that include non-structural and structural BMP's for reference in ordinance to be developed under BMP #5A. Non-structural BMP's to be included in the strategies for post construction runoff control are the following: • Limiting area of disturbance and use of impervious surfaces for new development and redevelopment projects to the maximum extent possible while

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
Revised	*Post construction runoff controls strategies.*				

5a. Additions

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 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
6A	Clean and inspect outfalls	DPW	Clean and inspect at least 1 time per year	Outfalls were inspected a minimum of once during Permit Year 5. Areas of known difficulty were inspected more often. Upstream testing and inspection was also performed.	Continue program
6B	Clean catch basins	DPW	Clean every catch basin at least once every 2 years	Catch basin cleaning was performed by outside contractors. This year all catch basins were cleaned by outside contractors or 100% of total 3,700.	Continue program
6C	Street Sweeping	DPW	2 street sweepers employed year round, weather permitting to clean all town streets at least once per year.	All streets received sweeping two to three times in Permit Year 5. Major arterials received additional sweeping.	Continue program
6D	Inspection and maintenance. of stormwater system	DPW	Inspect problematic system locations of the MS4 at least once per year and more frequently as conditions dictate.	Problem locations were reviewed as often as possible/needed, but minimally once per year.	Continue program
6E	Update Emergency Management Plan	DPW / Emergency Services	Update Plan 1 time per permit period		Review and update Emergency Management Plan as appropriate.
6F	EPA/DPW Spill Truck	DPW	Respond to spill emergencies.	The truck is available as needed. During the permit year, there were no major spills. The spill truck was deployed on one occasion in response to a minor hydraulic oil spill (<10 gals) in March 2008.	Available as needed.

6a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
6G	Integrated Pest Management Program	DPW	Use IPM methods to exclude pesticides on Town properties.	No pesticides whatever were applied by the Town to public parks, open spaces and other greenways in Town during the reporting period. Limited application of pesticides is used on problem roadside areas.	Continue IPM program for open spaces, parks and greenways under Town jurisdiction.
6H	Wet weather testing.	DPW and consultants	DPW will supplement existing testing program with wet weather testing 5-6 times per year.	Wet weather testing was performed on 3 occasions during permit year 5.	Complete wet weather testing of 10 areas identified in IDDE Plan 4 times in Permit Year 6.
6I	Reduce Salt/Sand Usage	DPW	Reduce salt and sand use by 5% normalized for # and severity of storms.	Steps were taken by the DPW to limit use of salt on roadways to the degree it could be done without increasing risks to the traveling public.	The DPW will be removing the salt barrels around the Town to reduce overall use of salt in Town. Take care to not overload salt/sand spreading trucks, instruct operators on proper methods of controlling the dispensing of slat/sand to prevent overdosing, and pay special attention to weather conditions to optimize the usage of sand and sand as needed to provide safe driving conditions.
6J	Train public works employees on pollution prevention and good housekeeping techniques.	DPW	Gather training materials and implement training to public employees by July 31, 2006.	Public works employees are being provided relevant information on pollution prevention and good housekeeping practices for municipal operations at parks and open spaces as well as stormwater system maintenance.	Continue to encourage public works employees to follow pollution prevention and good housekeeping practices.

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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

81 Water Quality Samples collected and sent to laboratory analysis.
147,773 linear feet of storm drains inspected and tested for illicit connections
43 Building inspections and dye tests for illicit connections
0 linear feet of smoke testing
11,771 Linear feet TV inspected and reviewed
3,000 ft of sewer replacement and rehabilitation design work completed and out to bid including

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures	($)	

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	20,000
Stormwater management committee established (Environment and Energy Efficiency Committee)	(y/n)	Y
Stream teams established or supported	(# or y/n)	N
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	y (entire length of Charles River)
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	8
▪ community participation	(%)	154 cars
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	Y

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	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				
▪ Post-Development Stormwater Management				

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	27
System-Wide mapping complete	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened	(# or %)	100%
Illicit discharges identified	(#)	1
Illicit connections removed	(#) (est. gpd)	1
% of population on sewer	(%)	99.99 %
% of population on septic systems	(%)	<.01%

Construction

Number of construction starts (>1-acre)	(#)	5
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100%
Site inspections completed	(# or %)	100%
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and $)	0
Complaints/concerns received from public	(#)	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100%
Site inspections completed	(# or %)	100%
Estimated volume of stormwater recharged	(gpy)	n/a

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	Once annually
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Once annually
Total number of structures cleaned	(#)	3700
Storm drain cleaned	(LF or mi.)	15,000 lf
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		
Cost of screenings disposal	($)	$65,700

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	2-3x
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	3+
Qty. of sand/debris collected by sweeping	(lbs. or tons)	

Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	LoRusso Landfill – Plainville, MA
Cost of sweepings disposal	($)	$4,500 (est.)
Vacuum street sweepers purchased/leased	(#)	2
Vacuum street sweepers specified in contracts	(y/n)	N

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management program mitigating against use of chemicals in place since 2001.		

Anti-/De-Icing products and ratios	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	95% 5%
Pre-wetting techniques utilized	(y/n)	Y
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 %)	
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N