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Municipality/Organization: Department of Conservation and Recreation

EPA NPDES Permit Number: MAR043001

MaDEP Transmittal Number:

Annual Report Number & Reporting Period: **No. 5: May 07-April 08**

Department of Conservation and Recreation NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Robert Lowell Title: Storm Water Manager

Telephone #: (617) 626-1340 Email: Robert.Lowell@state.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: Richard K. Sullivan

Title: Commissioner

Date:

Part II. Self-Assessment

The Department of Conservation and Recreation (DCR) has completed the required self-assessment and has determined that we are in compliance with all permit conditions, except as noted in the following tables. DCR received authorization to discharge under the general permit on November 8, 2007 by EPA and on November 21, 2007 by DEP. Copies of the authorization letters are included in Appendix A.

DCR has worked hard to continue to implement a comprehensive storm water program this past year with limited fiscal and labor resources. DCR storm water management efforts are supported by operating and capital appropriations that will total approximately $5.25 million in FY08 (July 2007 – June 2008). The DCR expects to use all available funds through the end of the fiscal year. The Governor's FY09 budget provisions for DCR are unknown at this time. If similar funding is available for storm water management in FY09, DCR will be able to continue its expanded level of service and identify better practices to reduce pollution in runoff from roads and parkways.

Part III. Summary of Minimum Control Measures

The Department of Conservation and Recreation owns and operates many different types of facilities and parkways which are covered by the NPDES Phase II General Permit. In order to accurately reflect the programs DCR has accomplished, both state-wide and for specific facilities, this annual report has been divided into separate tables. Table 1 describes the control measures which are not site specific. Tables 2 through 7 describes site or facility type specific BMPs that are being implemented at water supply/ reservoirs, state forests, state parks, beaches, construction sites or parkways.

A few of the BMPs included in DCR's Storm Water Management Plan (SWMP) are for facilities outside of the urbanized area. Therefore, the facilities addressed by these BMPs are not listed in the site specific tables. We continue to include these BMPs in Table 1 to demonstrate the many diverse programs being implemented by the DCR to raise awareness of storm water and water quality issues in the general public. We have noted these BMPs as facilities that are "outside of the urbanized area" in the table below.

Table 1: State-wide Best Management Practices (BMPs)

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
1-1	DCR Storm Water Web Page	External Affairs/IT Dept. (Wendy Fox)	Develop web page and publish storm water related publications (inc. SWMP and NOI), information and links on web page.	*Goal Met* – Permit Year 4 Annual Report was posted on web site. The August 21, 2007 SWMP and NOI were posted on the website.	Continue to update as necessary. Post copy of March 2008 SWMP. Post authorization to discharge letters from EPA and DEP. Post catch basin cleaning and parkway sweeping reports.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
1-5	Mobile Water Quality Education Seminars *(statewide)*	Operations (Curt Rudge)	Provide storm water/ water quality education educational events at a minimum of nine different locations. These events would be in addition to the facility/ program specific BMPs also listed in this SWMP.	*Goal Met* – DCR offered state-wide Public Education Events including water quality, storm water education (includes forestry practices, healthy ecosystems, water cycle, children's programs) at the following DCR facilities at least once. • Blue Hills Reservation • Breakheart reservation • Mount Greylock Glen • Pittsfield State Park • Purgatory Chasm State Park • Tolland State Forest • Walden Pond State Reservation • Waquit Bay Natural Resource Reservation • Western Gateway Heritage State Park	Provide educational events at a minimum of nine different locations during the year.
1-6	Charles River Conservancy Volunteer Clean Up Program	Operations (Jack Murray)	Continue to partner with Conservancy on Charles River Clean Up Program	*Goal Met* - DCR assisted with and coordinated support for this clean up program with CRWA and the Esplanade Association. Clean up day was held on 4/21/07. 2500 volunteers participated including the DCR Commissioner. Sixty five clean up sites in 18 communities were included. 30 tons of garbage was removed from the riverbanks. Trash collected included a refrigerator, cigarette butts, candy wrappers, a couch, plastic bags, coffee cups, car parts, thirteen bicycles and a parking meter.	Continue to be a major sponsor offering assistance and coordination of support for clean up program. Ninth annual clean up day is scheduled for 4/26/08.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
1-7	Charles River Reservation School Program	Operations (Curt Rudge)	Provide 1 storm water/ water quality related educational program each year.	Environmental education through the Charles River Reservation School Program was cancelled as of June 2007 due to inadequate staffing.	No planned activities.
1-8	Camp Nihan	Operations (Curt Rudge)	Provide 1 storm water/ water quality related educational program each year.	Environmental education programs at Camp Nihan were cancelled as of June 2007 due to inadequate staffing.	No planned activities.
1-9	Quabbin Educational Programs (*outside of the urbanized area*)	Water Supply Protection (John Scannell)	Continue to provide multi-session watershed related education programs on an annual basis to two schools in the Quabbin Reservoir watershed.	Program WET was cancelled as of summer 2007. Program was presented through Project WET.	No planned activities.
1-10	Wachusett Educational Programs (*outside of the urbanized area*)	Water Supply Protection (John Scannell)	Continue to provide multi-session watershed related education programs on an annual basis to two schools in the Wachusett Reservoir watershed.	Program WET was cancelled as of summer 2007.	No planned activities.
1-11	Project WET	Water Supply Protection (John Scannell)	Maintain sponsorship of state water education for teachers program.	Program WET was cancelled as of summer 2007.	No planned activities.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
1-12	"DownStream" Newsletter	Water Supply Protection (John Scannell)	Continue to develop and disseminate newsletter regarding issues relevant to Wachusett Reservoir/ Quabbin Reservoir watersheds twice a year.	*Goal Met* - DCR published and circulated this newsletter. The Spring issue discussed moose in the Quabbin Reservoir, a new fishing line disposal campaign, DCR's dam safety review program and animal tracking. The Fall issue discussed: forestry management, a follow up to fishing line recycling program started in the spring, Quabbin land management plan. Copies of the newsletters can be found at http://www.mass.gov/dcr/waterSupply/watershed/dwmfactsheets.htm and as Appendix C of this report. The newsletter is sent to members of the Friends of the Watershed (Wachusett, Quabbin and Ware River) Group.	Publish issue in May and November 2008. Place issues on web page.
1-13	Massachusetts Drinking Water Education Partnership (MADWEP)	Recreation (Gary Briere)	Maintain membership.	*Goal Met* – DCR is an active member of MADWEP.	Maintain membership.
1-14	Low Impact Development Project	Water Resources (Anne Monnelly)	Pursue the inclusion of public education component within the planning, permitting and implementation of one LID project a year.	Lakes & Ponds program sponsored parking lot retrofit with infiltration structures at Horseneck Beach State Park. Other LID erosion control projects were installed at Walden Pond, Nickerson SP, Watson Pond and Blue Hills Reservation.	Implement one LID parking lot retrofit and additional LID erosion control measures at other locations.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
1-15	DCR Storm Water Training Workshop	Planning and Engineering (Noel Baratta)	Provide ½ day training program to address storm water management regulation, policies and procedures relevant to DCR staff.	*Measurable Goal Previously Completed.*	Storm Water Handbook Training will provide training to similar group of staff members within six months of being issued.
1-16	Ipswich River Demonstration Projects	Director of Water Resources (Anne Monnelly)	Continue to include public education and outreach in the projects funded through the EPA Watershed Grant, as appropriate.	*Goal Met Previously in Permit Year 4*	No additional public participation related projects planned at this time related to the Ipswich River Demonstration Projects.
1-17	Partner with Center for Urban Environmental Studies	Chief Engineer (Noel Barratta)	Partner with Northeastern University to assist development of new pollution control methods for storm water.	*Goal Met* – DCR developed Notice to Partner with Northeastern and National Science Foundation.	Aid in the development of new pollution control methods.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
2-1	Formalize Partnerships with CLF and CRWA	General Counsel (Gary Davis)	Continue to work with CLF and CRWA and abide by Memo of Understanding (MOU)	*Goal Met* - DCR provides CLF/ CRWA with a semi-annual report summarizing the actions taken to meet the criteria outlined in the MOU. Semi-annual meetings are held to discuss the progress.	Continue to provide semi-annual reports and attend regularly scheduled meetings with CLF/ CRWA to review compliance with MOU.
2-2	UMass/DCR Program to monitor WQ in target areas of Wachusett Reservoir (*outside of the urbanized area*)	Water Supply Protection (John Scannell)	Continue program with UMass.	*Goal Met* - Program is ongoing. Current focus is development of hydro-dynamic model of Stillwater Basin section of reservoir and invasive species.	Subject will be developed for summer 2008 study.
2-3	Public NPDES Meetings to Discuss Annual Report	Planning & Engineering (Noel Baratta)	Hold one meeting at three locations each year for internal staff, interested parties and public. Track and record comments received.	*Goal Not Met* - DCR was waiting to receive authorization to discharge from EPA before holding meetings. Authorization has been received.	DCR will hold public meetings to discuss Permit Year 5 Annual Report and general permit requirements.
2-4	Partnership and Friends Database	External Affairs (Wendy Fox)	Send an annual letter regarding storm water/ NPDES issues to the watershed advocacy groups included in their Partnership and Friends database.	*Goal Met* - Database has over 346 contacts. An e-mail letter informing members of new storm water web site references and information was sent to all members as recently as April 2006 regarding the new street sweeping plan.	Send annual email regarding storm water/ NPDES issues.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
2-5	Storm Water Related Concerns/ Feedback Reported on DCR Web Site	External Affairs (Wendy Fox)	Continue to maintain staffing to forward concerns/ feedback to appropriate department and track response to concerns submitted by the public via DCR's web site.	*Goal Met* - Web site is active. DCR Commissioner has implemented concern/feedback letter tracking and response system.	Continue program.
2-6	DCR Stewardship Council	External Affairs (Wendy Fox)	Continue to participate. Raise storm water issue, as appropriate. Present summary of annual report to council.	*Goal Met* - DCR attends monthly and is an active participant.	Continue participation. Present summary of Annual Report for Permit Year 5.
2-7	Massachusetts Water Resource Commission (MWRC)	Water Supply Protection (John Scannell)	Continue to be involved in program and provide technical and staff support to MWRC.	*Goal Met* - DCR attends monthly and is an active participant. DCR was involved in the review of proposed changes to DEP storm water regulations.	Continue participation.
2-8	Lakes and Ponds Program	Water Supply Protection (John Scannell)	Continue to sponsor program.	*Goal Met* - DCR continues to sponsor this program. Examples of LID installations and demonstration projects for the Ipswich River watershed are available through http://www.mass.gov/dcr/waterSupply/ipswichRiver/index.htm	Continue sponsorship.
2-9	Think Blue Campaign	Planning & Engineering (Noel Baratta)	Explore a partnership with Think Blue. Provide update on program and schedule in annual reports.	*Goal Added in March 2008 SWMP*	Meet with Think Blue program to discuss possible options for using Think Blue information at DCR facilities.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
2-10	Partnership with MyRWA	Planning & Engineering (Noel Baratta)	Explore a partnership with MyRWA. Include a summary of collaborative activities in annual reports.	*Goal Added in March 2008 SWMP* – DCR has contacted MyRWA and begun discussion of possible partnerships.	Further define partnerships and implement programs.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./ Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
3-1	Drainage Outfall Inventory	Planning & Engineering (Noel Baratta)	Locate all known outfalls owned and operated by DCR within urbanized areas. Explore possibility of providing inventory for public review and include "Contact Us" Link.	*Goal Met* - DCR has located all known outfalls owned and operated by DCR within urbanized areas.	DCR will verify the location and condition of outfalls located from paper maps during illicit discharge detection field tasks. DCR will continue to explore possibility of providing inventory for public review. If an appropriate method is identified it will include a method for contacting the stormwater personnel.
3-2	Drainage Inventory Specification	Chief Engineer (Noel Baratta/ENSR)	DCR will develop and implement a Drainage Inventory Specification which will require submission of drainage infrastructure information from construction and redevelopment projects to add to the infrastructure database.	*Goal Met* - Drainage specifications have been included in revised contract language and standard contract documents for newly issued contracts.	All new construction projects will continue to include the Drainage Inventory Specification.

BMP ID #	BMP Description	Responsible Dept./ Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
3-3	Illicit Drainage Connection Policy	General Counsel (Gary Davis)	DCR is preparing a policy prohibiting illicit discharges to the DCR storm water system. The Policy will be finalized and issued during Fall 2006. Develop formal agreement with Attorney General's office.	*Goal Not Met* - DCR is evaluating drainage connection policies and scenarios to examine which policy will best serve DCR and protect its properties. DCR has developed a draft formal agreement to share with the Attorney General's office.	Prepare draft policy, review and finalize by end of permit year. Finalize formal agreement with Attorney General's office.

BMP ID #	BMP Description	Responsible Dept./ Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
3-4	Drainage Infrastructure Inventory	Chief Engineer (Noel Baratta)	Identify DCR's roadway, parkway and boulevard drainage infrastructure and add to GIS Drainage Outfall Inventory/ database.	*Goal Met* - During this past permit year, DCR has continued to add to and update the stormwater infrastructure database. Data from construction drawings had fully been incorporated into the database, identifying areas that required field survey (approximately half of DCR parks and parkways). DCR's consultant performed the field survey over the past year, using two crews daily at the peak of survey in the summer of 2008. Over 6,000 points and 6,000 linear features were recorded, completing coverage of the infrastructure database. The database has been converted to a network, providing connectivity information which can be used to determine urban drainage areas and identify features that are connected (ex. pipe system related to a given outfall). The DCR records catch basin cleaning and maintenance records during each maintenance visit.	The infrastructure database is a dynamic work in progress. Updates are made to the database when new construction takes place. Corrections to the database will be made as areas are visited during the illicit discharge investigation. DCR is now in the process of linking the maintenance records to the infrastructure database, providing a consolidated record of the feature and all work performed on the feature over the years. In addition, features that have been identified during maintenance work that were missed from the infrastructure database will be added.

BMP ID #	BMP Description	Responsible Dept./ Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
3-5	Illicit Connection Sampling Program	Planning & Engineering (Noel Baratta)	Continue to prioritize and review known potential illicit connections. Once DCR, or its consultant, completes large portions of the drainage infrastructure inventory (BMP 3-4), DCR will develop a priority area list and focus on those systems. DCR will summarize the systems reviewed, the outcome of the reviews and any proposed follow up work in each annual report. The annual report will also include the priority areas list for the next permit year.	*Goal Met* - DCR's consultant developed and preformed an illicit discharge detection procedure to test for possible illicit discharge sources in DCR's storm sewer systems. DCR has identified particular areas based on previously documented complaints and comments. This past permit year, DCR identified a four mile section of Memorial Drive in Cambridge and two mile section of Ocean Avenue as areas for illicit discharge investigation. The investigation, performed in the Fall of 2007, included those areas in addition to section of Revere Beach Boulevard parallel to Ocean Avenue. The investigation procedure included using the stormwater infrastructure database to determine locations and limits of the stormwater systems, visual inspection of the stormwater system during dry weather, and sampling and field testing incoming flow. No dry weather flows were observed in the Memorial Drive stormwater systems. The field crew identified three locations in Revere with dry weather flow. *(continued on next page)*	DCR is currently developing a list of areas to perform IDDE work. The list is being developed based on observations made by the field crews during the drainage infrastructure survey; public comments, maintenance crew observations, areas that have not been visited in the field (data has come from construction drawings), and areas discharging to higher priority water bodies. By surveying over 6,000 of features, field crews became familiar with the appearance of catch basins and manholes and therefore are better suited to identify suspect conditions during the illicit discharge investigation. Once the list is developed DCR will inspect 20% of their stormwater system within the urbanized area during the spring, summer, and fall of 2008.

BMP ID #	BMP Description	Responsible Dept./ Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
3-5 cont'd				Two appeared to be very small groundwater seepage flows (too small to sample) and the other was determined to be washwater based on field tests. The full investigation procedure and results are located in Appendix D. DCR has also been preparing for the first year of a five-year illicit discharge investigation rotation. As DCR's consultant performed the field survey component of the infrastructure database this past year (see BMP #3-4), crews observed and noted the presence of dry weather flow or other suspect characteristics of the system that might indicate illicit discharges. .	
3-6	Drainage Tie-In Policy	General Counsel/ Chief Engineer (Gary Davis/ Noel Baratta)	Develop a SOP regarding drainage tie-ins from private entities to DCR's MS4.	*Goal Partially Met* – DCR is evaluating drainage tie-in policies and scenarios to examine which policy will best serve DCR and protect its properties.	Complete policy.

BMP ID #	BMP Description	Responsible Dept./ Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
3-7	Develop Storm Water Control Agreements with Other MS4s	General Counsel (Gary Davis)	DCR will implement a program to work cooperatively with operators of interconnected MS4s in the instance where storm water discharges impact either system. DCR will develop control agreements with the discharging municipality.	*Goal Met* – No action required.	For municipalities that share a property boundary with DCR, DCR is examining which approach will be most effective to ensure that storm water discharges from DCR neighbors will be in compliance with storm water control requirements. Will be completed once Drainage Tie-In Policy is in issued.
3-8	Illegal Dumping	General Counsel (Gary Davis)	Continue training of rangers regarding illegal dumping and work with law enforcement when necessary.		

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
4-2	E&S/ NPDES Contract Bid Item and Special Provisions	Planning & Engineering (Noel Baratta)	Prepare contract bid item and special provisions. Include in all new contracts which disturb more than one acre. Bid item will include erosion control specifications.	*Goal Partially Met* - Erosion and sedimentation control specifications will be included in revised contract language and standard contract documents in Fall 2006.	Continue to include Erosion and Sediment Control Specification in all new construction projects.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
4-3	Construction SWPPP Template	Planning & Engineering (Noel Baratta)	DCR will develop a SWPPP Template for use by Contractors on DCR projects. Template will be placed on DCR website for download by contractors.	*Goal Partially Met* - Template is drafted and under final review.	Finalize template and upload to DCR website.
4-5	On-going Construction Projects Web Page	External Affairs/ IT Dept. (Wendy Fox)	DCR will maintain the construction related web page that includes information regarding on-going DCR construction projects.	*Goal Not Met.* – Project web page highlights on-going projects both design and construction. Information regarding projects that are subject to the Construction GP was not added.	DCR construction sites that exceed 1 acre disturbance will be posted on the DCR web site in Spring 2006. Post on-going construction sites which are covered by NPDES Construction General Permit.
4-6	Annual Erosion Prevention/ Sediment Control Training	Planning & Engineering (Noel Baratta)	Provide annual training to DCR construction management staff. Report number of attendees, topics covered and dates of training in annual report.	*Goal Partially Met* – Training scheduled for May 2007. Will include DCR engineering, planning and operations staff received half day storm water training.	Provide annual training.
4-7	Technical Assistance to ConComs	Water Supply Protection (John Scannell)	Continue to provide technical assistance and the staffing level necessary to provide timely responses.	*Goal Met* - Technical assistance was provided to twelve (12) Conservation Commissions regarding projects within the Quabbin and Wachusett Reservoirs.	Continue to provide assistance as requested by Conservation Commissions.
4-8	Contract Bid Item and Special Provisions Enforceability	Planning & Engineering (Noel Baratta)	Include notice, which defines the procedure to address storm water related problems identified at construction sites, in all new contracts.	*Goal Met* – Continued to require development of SWPPP and filing of NOI for construction sites which disturb more than one acre.	Continue to implement in all new projects which disturb more than one acre.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
4-9	Construction Runoff Enforcement from DCR and/or Offsite Construction Pollution	General Counsel (Gary Davis)	Refer offsite/ non-DCR construction projects that are causing construction related pollution on DCR property to Attorney General's office as necessary. Refer to EPA is appropriate.	*Goal Met* – No construction related pollution action was necessary this year.	Refer problems identified to AG or EPA. Document in annual report.
4-10	Utility/ Drainage Tie-In Permit	Permitting (Don Guidobone)	Continue to require all offsite projects which need to tie into a DCR MS4 to receive a permit under this program.	*Goal Met* – Offsite projects are required to receive this permit before tying into a DCR MS4. 6 permits were issued in Permit Year 5.	Require tie-ins to receive a permit.

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	Planned Activities – April 08 to March 09
5-1	Compliance with MA DEP Stormwater Management Policy	Planning & Engineering (Noel Baratta)	Apply Stormwater Management Policy Guidelines to all development/ redevelopment projects.	*Goal Met* - Participated in DEP Storm Water Advisory Council and planning committees. All new/ redevelopment projects were designed to incorporate the current stormwater best management practices.	Continue to participate in SW Advisory Council meetings. All new/ redevelopment projects will be designed to incorporate the most current stormwater best management practices. Storm water discharges to tributaries to the Quabbin or Wachusett watersheds will be reviewed for applicable storm water policy and standards.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-2	DCR Storm Water Handbook	Planning & Engineering (Noel Baratta)	Develop Handbook and issue department-wide and to Contractors. New projects will be designed in accordance with the Handbook.	*Goal Partially Met* - Storm Water Handbook has been drafted and circulated to DCR H/R and Parks Engineering but has not been finalized.	Finalize Handbook.
5-3	Storm Water Handbook Training	Director of Human Resources (Patricia Vantine)	Provide 2 seminars within 6 months of issuing handbook to train internal personnel and consultants. Provide annual seminars thereafter. Record # of attendees and dates of training.	*Goal Met* – No action required since Handbook was not finalized.	Provide two seminars to train internal personnel and consultants on Handbook in Winter 2008/2009.
5-4	BMP Long-Term Operation and Maintenance	Operations / Planning and Engineering (Jack Murray/ Noel Baratta)	DCR has committed 1.9 million dollars annually to provide long-term maintenance of BMPs on the schedule indicated in the Maintenance Activity Schedule of the SWMP.	*Goal Met* - Long-term operation and maintenance was accomplished using contracts established for pavement resurfacing and deferred maintenance. DCR's storm water management efforts are supported by operating and capital appropriations that will total approximately $4.5 million in FY08 and expects to utilize all available funds to continue our expanded level of service and to identify better practices to reduce pollution in runoff from roads and parkways	DCR has requested $5 million for long-term operation and maintenance of BMPs in FY09. Budget process/ deliberations are still in process.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-5	Low Impact Development Projects	Water Resources (Anne Monnelly)	Actively work on the planning, permitting and implementation of one Low Impact Development (LID) project each year.	DCR performed design/ planning of the following LID projects this year. 1. Watson Pond, Taunton (demonstration project by Bureau of Water Resources/Lakes & Ponds; not actually a DCR pond) 2. Lake Wyola - rain gardens 3. Demerest Lloyd State Park – LID in parking lot Also see response to BMP 5-8 and 5-9 below.	Build LID projects. Also see response to BMP 5-8 and 5-9 below.
5-6	Walden Pond Stormwater Improvements *(outside of urbanized area)*	Planning & Engineering (Noel Baratta)	Complete design of storm water improvements and install.	*Goal Met* - Bank stabilization and beach replenishment performed.	No work anticipated. Will review swale next to driveway for future improvements.
5-7	Post Construction Runoff Enforcement from Offsite Pollution	Planning & Engineering (Noel Baratta)	Refer off site projects that runoff to DCR property to Attorney General's office as necessary.	*Goal Met* – No post construction runoff enforcement actions necessary this permit year.	Refer problems identified to AG or EPA. Document in annual report.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-8	Ipswich River EPA Targeted Watershed Grant – Low Impact Development (LID) Subdivision Demonstration Project	Water Resources (Anne Monnelly)	The DCR received a $1.04 million grant from the Environmental Protection Agency's Targeted Watershed program to demonstrate an integrated approach to addressing the problems facing the Ipswich River. This approach encompasses two strategies: • Low-Impact Development (LID) – landscaping and design techniques that capture stormwater and recharge it to the groundwater • Water Conservation – education strategies and technologies that reduce demand on water supplies, and associated groundwater pumping, especially during dry months	DCR selected Partridegeberry Place, a new 20-lot subdivision in Ipswich designed by Meridian Associates, as the LID subdivision demonstration site. The developer, the Martins Companies, completed construction of the key LID features in December 2006. DCR also selected an adjacent conventional subdivision on Hood Farm Road as a basis for comparison for the runoff monitoring. USGS developed a design for monitoring site runoff from both the LID and conventional subdivisions and will install monitoring equipment during the winter and spring of 2007. Collection of site runoff data will continue for one year.	Continue installation of monitoring equipment during the spring of 2007. Collection of site runoff data will continue for one year.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-8a	Ipswich River EPA Targeted Watershed Grant - Green Roof Demonstration Project	Water Resources (Anne Monnelly)	Monitor quality and quantity of runoff from the green roof at Whipple Annex and conventional roof at Ipswich Town Hall. Summarize results and include in annual report.	The green roof demonstration site, Whipple Annex, is a former school building, which is being redeveloped as affordable housing for seniors, by the North Shore Housing Trust. The green roof covers the entire rooftop, approximately 3,000 square feet, including a steeply-pitched stairwell headhouse. The U.S. Geological Survey is collecting runoff samples from the green roof to assess both the quantity and quality of runoff. Water quality samples will be analyzed for a range of parameters, including conductivity, pH, nitrogen, phosphorus, metals, and total petroleum hydrocarbons.	The data from the green roof will be compared to data from the conventional roof at Ipswich Town Hall to assess the effectiveness of the green roof in reducing rooftop runoff and removing pollutants.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-8b	Ipswich River EPA Targeted Watershed Grant - Permeable Paving Demonstration Project	Water Resources (Anne Monnelly)	Continue groundwater quality sampling for one year upon completion of project construction. Summarize results in annual report.	Silver Lake is an important recreational resource that supports swimming, fishing, wildlife viewing, and boating. However, the lake is degraded from nutrients, sediment, and bacteria from the surrounding conventional stormwater system and nonpoint source runoff. Beach closures due to high bacteria counts are a repeated occurrence. This project incorporates three LID practices designed to reduce runoff volume, improve water quality, and enhance groundwater recharge: • Permeable paving materials • Bioretention cells • Vegetated water quality swales The USGS installed seven wells in the parking lot. Four wells provide data on groundwater levels, and three provide data on groundwater quality. USGS monitored preconstruction conditions quarterly and after a few large storms. Following construction, USGS began monitoring groundwater levels and collecting samples monthly. Sampling is designed to detect any changes in groundwater quality associated with recharge from the parking lot.	Complete monitoring and analyze results.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-8c	Ipswich River EPA Targeted Watershed Grant - LID at Silver Lake	Water Resources (Anne Monnelly)	Perform sampling of stormwater volumes and water quality for one year upon completion of project construction. Summarize results versus pre-construction in Year 5 annual report.	This project incorporates several LID techniques to replace the conventional stormwater collection system in two streets draining to Silver Lake. Stormwater flow paths were disconnected from the piped drainage system by directing stormwater to rain gardens and porous pavers. Eleven rain gardens are located in the roadway rights-of-way. The rain gardens provide treatment as water percolates through the soil, and nutrients and contaminants are processed by the plants. The roadway edges in three areas along Silver Lake Avenue were resurfaced with porous pavers with underlying infiltration beds. The porous pavers allow stormwater to soak into the ground between the paving units. In addition to the LID techniques, the work includes replacement of two catch basins with deep-sump catch basins, to improve capture and removal of sediment, and excavation of accumulated sediment in the area around an outfall to Silver Lake, in order to restore proper flow through the drainage system.	Perform monitoring of pre versus post construction.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-8d	Ipswich River EPA Targeted Watershed Grant - Rainwater Harvesting	Water Resources (Anne Monnelly)	Continue data collection of outdoor water use or each participating household with rainwater harvesting systems through the irrigation seasons of 2007 and 2008. Compare use with historic records and summarize in annual report. Install large underground system.	This project funds installation of roughly 40 rainwater harvesting systems in residential settings. The systems consist of a storage tank, a pressure pump to aid in water distribution, a spigot for a hose, and a water meter to measure flow. Three sizes of storage tanks are being installed. Twenty-eight 200-gallon and eleven 800-gallon tanks have been installed on residential properties in Wilmington. One 200-gallon system was also installed at an "Outdoor Classroom" at the Winthrop Elementary School in Hamilton. The system provides water to a 2,000-square-foot butterfly and vegetable garden. Teachers at the school are developing a specific curriculum for the outdoor classroom and the rainwater harvesting system.	A large-capacity (8,000-gallon) underground storage vault will be installed at the Boutwell Elementary School in Wilmington, to supply water for irrigating the adjacent ball field. The water meter attached to each rainwater harvesting system will provide data on the volume of rainwater pumped from the storage tanks for outdoor use. A portion of this volume will be considered potable water conserved, based on recommendations of a technical advisory committee. In addition, Wilmington Water Department records on each residential participant's domestic water use will be analyzed to compare domestic water demand before and after installation of the rainwater harvesting system.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
5-8e	Ipswich River EPA Targeted Watershed Grant - LID Ball Field	Water Resources (Anne Monnelly)	Begin data collection of water use and continuous soil moisture retention on field in 2007 and continue through summer of 2008.	A portion of a municipal athletic field complex, located adjacent to the river at Ipswich River Park and totaling eight acres, is being redeveloped to maximize infiltration and minimize irrigation requirements and application of fertilizer and pesticides. Techniques include: • Soil enhancement with Ecolite, an additive that retains moisture • Use of drought-resistant turf • Installation of innovative irrigation controls	The town will monitor the soil moisture of the amended field and the control fields and the volumes of water used on each of the four fields in the complex. The watering needs and soil moisture of the amended field will be compared to the conventionally treated fields.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
6-17	Maintenance Tracking System	Planning & Engineering/ Operations (Noel Baratta/ Jack Murray)	Develop a maintenance tracking system. Add storm water infrastructure information inventoried in BMP 3-4. Include inspection/ maintenance schedule and create reports of BMPs that are "scheduled" for cleaning.	DCR has hired a consultant to develop this maintenance tracking system and add historical data of maintenance events to the system..	Consultant will develop a global positioning system (GPS) program to work with DCR's GPS operating systems and the existing geospatial stormwater infrastructure database to record maintenance activities. The consultant will train DCR employees in recording and processing data using the new system. The consultant will also organize previous DCR maintenance records into a database that can be linked to the stormwater infrastructure database.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
6-18	Maintenance Activity Schedule	Operations (Jack Murray)	Maintain infrastructure and roadways in compliance with maintenance activity schedule.	*Goal Met* – **Street Sweeping**: To insure adequate street sweeping frequency, DCR entered into a three-year renewable contract with a street sweeping contractor to clean certain DCR parkways and roads. The contract provides for sweeping roadways that discharge to impaired receiving waters using mechanical and vacuum sweeping equipment at least four times per year, and monthly in areas where cars are allowed to park. In September, DCR added the Fellsway and sections of Fellsway East and Fellsway West (total of 33,500 linear feet of additional parkway) to the monthly street sweeping schedule. Car parking in these areas has restricted access to the curb line thereby reducing the effectiveness of street cleaning. The program is outlined on DCR's web site at http://www.mass.gov/dcr/sweep.htm. (*cont'd*)	Continue to comply with maintenance activity schedule. **Street Sweeping**: Continue to provide and fund contract for sweeping roadways that discharge to impaired receiving waters using mechanical and vacuum sweeping equipment at least four times per year, and monthly in areas where cars are allowed to park.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09.
6-18 (cont'd)	Maintenance Activity Schedule			The DCR street sweeper fleet (nine sweeper units) received maintenance periodically during the year and were operated as necessary by DCR to keep parking lots and roadways parkways as clean and trash free as possible. In June, DCR purchased three new full size street sweepers and six smaller vacuum units for use by Division of Urban Parks and Recreation (DUPR.) These units are operated mostly on beach parkways and parking lots to keep these seasonal facilities as clean and trash free as possible. Beach sand screener/sanitizers were operated on a daily basis at Revere Beach, Nantasket Beach and other high use beach areas to reduce contaminants in the beach sand (cigarette butts, plastic bottles, etc.) that threaten surface water quality and to improve beach experiences for visitors. These beach maintenance services are performed by staff that also operates street sweepers when not operating beach sanitizers. DUPR district managers have the responsibility to prioritize and schedule these tasks.	

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
6-18 (cont'd)	Maintenance Activity Schedule			**Leaf Removal:** To improve seasonal leaf removal DCR purchased three (3) high efficiency leaf loader machines to assist removal of leaves and debris from urban parkways. This new equipment enables DCR to better clean those roads lined with oaks and other trees that drop their leaves late in the season and often cannot be removed effectively before winter conditions prevent their removal. **Catch Basins**: Over the spring and summer DCR continued to systematically clean catch basins and water jet the associated outlet drain pipes using private contractors overseen daily by DCR staff. Between March until August 2007, contractors cleaned and water jetted 1,808 catch basins with these locations recorded using GPS. For the fiscal year ending in June 2007 DCR spent $1.25M to clean and repair catch basins.	**Leaf Removal:** **Catch Basins**: DCR will continue to systematically clean catch basins and water jet the associated outlet drain pipes, as determined necessary, using private contractors overseen daily by DCR staff. DCR anticipates dedicate a similar amount ($1.25M) and level of effort this year as in fiscal year 2007.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
6-18 (cont'd)	Maintenance Activity Schedule			**Material Storage Yard Maintenance**: MassHighway has taken over the deicing and snow operations for all DCR roads. Therefore, material storage yard maintenance is no longer relevant. **Fleet Maintenance**: DCR has hired a fleet manager (Joe Suppa). Individual facilities are reviewed in Table 2-7 of this report.	**Material Storage Yard Maintenance:** Not applicable. **Fleet Maintenance:** Fleet manager will review fleet maintenance schedule.
6-19	Winter Storm Plan	Operations (Jack Murray)	Continue to maintain a responsible winter storm program and provide sufficient funding.	*Goal Added in March 2008 SWMP* -	Continue to maintain winter storm program where DCR retains responsibility (e.g. sidewalks, parking lots, certain bike paths, etc. Massachusetts Highway Department has responsibility for snow and ice control on most other DCR roads and parkways. Funding budgeted for FY09 has not been determined.
6-20	Pet Waste Management	Operations (Jack Murray)	Continue pet waste management program. Continue to train DCR park rangers to monitor this program. Coordinate with law enforcement if necessary.	*Goal Added in March 2008 SWMP* -	Continue pet waste management program.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
6-21	Pool Discharge SOP	Planning & Engineering (Noel Baratta)	Update and re-issue SOP. Provide training to pool staff.	*Goal Added in March 2008 SWMP* - Measurable goal was added in March 2008 to the SWMP to address a citizen concern regarding pool discharges. An existing SOP was identified for update.	Update and re-issue SOP. Provide training to pool staff, as necessary.

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
7-1	Wetland Protection Act Compliance	Operations/ Planning & Engineering (Jack Murray / Noel Baratta)	Continue compliance with WPA.	*Goal Met* - Wetlands Protection Act is actively enforced at all DCR properties including those not located within urbanized areas. DCR has staff specifically dedicated to WPA compliance in Wachusett and Quabbin Reservoir watersheds.	Continue compliance.
7-2	401 Water Quality Certification	Operations/ Planning & Engineering (Jack Murray / Noel Baratta)	Continue compliance with 401 WQ Certification.	*Goal Met* - DCR did not request any 401 WQ certifications during the past six months.	Continue compliance.
7-3	Cultural Resources Review	Chief Archeologist (Tom Mahlstead)	Continue to review potential impact to historic properties during conceptual design stage.	*Goal Met* - DCR reviews all projects for potential impact to historic properties during design phase.	Continue reviews.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
7-4	Chicopee Basin, French Basin, Mill River Basin, Northern Blackstone and Connecticut River TMDLs	Water Supply Protection/ Chief Forester (John Scannell/ Jim Dimaio)	Provide summary table of timber harvesting activities, date forest cutting plan was approved and proposed BMPs in each annual report.	*Goal Partially Met* - 384 acres and 7 timber sales were conducted in the Northern Blackstone Basin.	Provide summary report in annual report.
7-5	Connecticut Basin TMDL - Train Conservation Commission on Timber Harvest BMPs	Chief Forester (Jim Dimaio)	Present short seminar for each Conservation Commission.	*Goal Met* - Training provided for vernal pool identification and erosion control measures.	Perform presentations during Spring 2008.
7-6	Permit Year TMDL Summary	Planning & Engineering (Noel Baratta)	Include summary of TMDL reports approved by EPA during the previous permit year which include recommendations for actions by DCR in annual report.	*Goal Met* – Section 7b of this annual report includes a summary of the current Final TMDLs and those that include implementation recommendations which impact DCR (Table 8).	Continue to be involved in the development of draft TMDLs and implement recommendations summarized in Table 8.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – April 08 to March 09
7-7	Priority Resource Area Review Program	Planning & Engineering (Noel Baratta)	Implement a program to review the outfalls identified in the outfall inventory which discharge to one or more of the resources outlined in Part V and IX of the permit.	*Goal Partially Met* - DCR has updated the receiving water body table (Appendix C of the March '08 SWMP) to reflect the outfalls identified in the drainage inventory. The table summarizes the number of outfalls by sub basin number and identifies the impaired waterbody included in the sub-basin. The lack of publicly available watershed layer for each impaired waterbody meant that some sub-basins have more than one impaired waterbody within the watershed. **Blair Pond Improvements** - DCR identified the need for improvements to Blair Pond to improve hydrologic function and aesthetics of the pond. Blair Pond receives water from Clay Pit Pond in Belmont which is listed on the Massachusetts 303d list as Category 5 for Pesticides and discharges to Alewife Brook which is Category 5 Impaired Needs TMDL for Metals, Nutrients, Organic enrichment/Low DO, Pathogens, Oil and grease, taste + odor + color, and "objectional deposits".	DCR will use the updated receiving water table and MA GIS layers to develop a list of outfalls that discharge to a priority resource area. DCR is also exploring the ability to use GIS software to develop individual impaired waterbody watersheds which will allow DCR to further identify the impaired waterbodies with DCR outfalls. The list once completed will be used for prioritizing IDDE work and implementing LID project. **Blair Pond Improvements** - DCR's consultant will perform a hydraulic and water quality analysis of Blair Pond and recommend improvements to increase its hydrologic function and aesthetics.