Municipality/Organization: Massachusetts Highway Department

EPA NPDES Permit Number: MA043025

MaDEP Transmittal Number: W-040919

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

NPDES Phase II Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Mr. Henry Barbaro Title: Supervisor of Wetlands & Water Resources

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Certification:

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

Signature:

Printed Name: Luisa M. Paiewonsky

Title: MassHighway Commissioner

Date: 4/30/08

Part II. Self-Assessment

MassHighway has completed the required self-assessment and has determined that the MS4 is in full compliance with all permit conditions. MassHighway has received full authorization to discharge stormwater from MassHighway owned and operated MS4s in urbanized areas of Massachusetts on April 2, 2007. EPA requested that MassHighway continue to update/revise the SWMP in a letter dated August 18, 2006 and October 10. 2006. MassHighway submitted a revised SWMP to address the EPA comments on January 11.2008.

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	Planned Activities – 2008
1A	MassHighway Training Assistance Program (MTAP)	MTAP	Facilitate one training program related to storm water and /or snow and ice control as a means of reducing source pollution. Document attendance numbers.	Fourteen Snow & Ice Control classes were conducted in 2007, with a total of 453 personnel attending this training. A change this season was the inclusion of a ½-day Communications Skills segment, presented by Management Action Program instructors, Rockie Blunt or Wally Coyle. An additional Snow & Ice Retreat was held for all management personnel. Trainings were held as follows: **2007 DATE** — **Location** Oct. 11 — District 1 Oct. 12 — District 3 Oct. 16 — District 2 Oct. 18 — District 4 Oct .19 — District 5 Oct .23 — District 1 Oct. 24 — Worcester - Supervisors Mtg Oct. 25 — District 2 Oct. 26 — District 4 Oct. 30 — District 3 Nov. 1 — District 5 Nov. 2 — District 4 Nov. 13 — District 5 Nov. 14 — District 4 Nov. 19 — District 3	Facilitate one training program related to storm water and /or snow and ice control as a means of reducing source pollution.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
1B	Baystate Roads	Baystate Roads	Provide one training program for MassHighway employees and one for municipal DPW snowplow drivers related to snow and ice control as a means of reducing source pollution. Document attendance numbers.	Snow and Ice Training was held with 203 total in attendance. 12/07/2007 – Tewksbury 11/29/2007 – Taunton 11/09/2007 – Stockbridge 10/31/2007 – Holyoke 11/16/2007 - Sterling Topics covered concentrated on salt, sand and liquids. Calibration and the smart application of chemicals were stressed. Operations and housekeeping (with regard to salt storage) were also reviewed. Baystate also included a "Let it Snow" article in their newsletter sent out in the Fall 2007. The article discussed the new chemical application guidelines for winter operations. The newsletter is available at www.baystateroads.org. Baystate also continued to distribute their plow calibration DVD that demonstrates how to calibrate salt spreader output to reduce chemical use	Provide one training program for MassHighway employees and one for municipal DPW snowplow drivers related to snow and ice control as a means of reducing source pollution.
IC-1	MassHighway Web Site	IT/Environmental	Add Environmental Section web page to web site.	Measurable goal completed in Permit Year 1.	Measurable goal complete.
1C-2	MassHighway Web Site	IT/ Environmental	Include link for contacting Highway Department via email. Review emails and direct to appropriate department.	The MassHighway web site includes a link for contacting the Highway Department via email. Emails received are reviewed and directed to the appropriate department.	Measurable goal complete.
1C-3	MassHighway Web Site	IT/ Environmental	Evaluate web page annually and revise as necessary.	The Environmental web page has been reviewed and updated.	Evaluate web page and revise as necessary.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
1D-1	**Remove** Storm Water Training Workshop	Environmental/ MTAP	Conduct training for MassHighway personnel every two years. Summarize date of meeting, topics covered, and #of attendees in annual report. Also include # of Snow& Ice training classes, and # of "tailgate" meetings.	This BMP is duplicative since storm water training is addressed through the BMP 1A program above. The BMP 1D-1 is replaced by the additional commitments made in BMP 1A in the January 2008 SWMP.	BMP Removed
1D-2	**Remove** Storm Water Training Workshop	Environmental/ Baystate Roads	Conduct storm water training workshop for municipal DPW personnel every two years. Summarize training programs similarly to above.	This BMP is duplicative since storm water training is addressed through the BMP 1B program above. The BMP 1D-2 is replaced by the additional commitments made in BMP 1B in the January 2008 SWMP.	BMP Removed
1E	Educational Seminars for CIM members	Construction Section	Provide educational seminars for CIM members on CGP Permit coverage and environmental compliance in Permit Year 1.	Measurable goal complete in Permit Year 1.	Measurable goal complete.
1F	MassHighway/ Municipal Tie-In Review Process	Environmental/ Districts	Develop communication mechanism re: MassHighway drainage that discharges to a local MS4. Develop review process for addressing those concerns. Notify other MS4s of process.	BMP Revised – see 1F below	Deleted

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
1F **Revised** (Revised in Jan 08 SWMP)	Post Contact Names for Municipal Drainage Concerns on MassHighway Web Site	Environmental/ Districts/ GIS	1) Distribute a flyer with contact names to municipalities during May 2007 Baystate Roads NPDES Phase II General Permit seminar. 2) Post DHD contact name for each district on website for municipalities to contact and maintain link. 3) GIS group will develop a program to provide easy to use access and allow the public to identify a selected area and review the MassHighway owned roads and outfalls. MassHighway will then review alternatives for alerting towns and the public to the availability of this information.	1) Flyer distributed at each of the three May 2007 Baystate Roads NPDES seminars. May 16 Marlborough - 50 people May 17 Tewksbury - 50 people May 23 Palmer - 30 people May 24 Fall River - 50 people 2) DHD contact names have been added to web site at http://www.mhd.state.ma.us/default.asp?pgid=dist/distRoot&sid=wrapper&iid=dist/dist.asp 3) MassHighway shared drainage outfall inventory information with towns which requested information including Beverly, Lexington and Weymouth. MassHighway also worked with the Town of Hatfield who was developing a proposal to obtain Unobligated National Incident Management Systems (NIMS) Funds to purchase GPS equipment. The town wanted to use the equipment to inventory their infrastructure including stormwater. The town plans to share information they gather regarding state highway drainage structures as it pertains to I-91 and Routes 5&10 in Hatfield.	3) MassHighway is developing an Asset Management system. Part of the system will include determining how best to share infrastructure information with the general public. MassHighway will also review municipal tie-ins identified during the outfall inventory task and contact towns with tie-ins to discuss.
1G	River and Stream Signs	Traffic Operations	Maintain signs identifying rivers and streams crossed by MassHighway roads, until crossing of all named rivers and streams are signposted.	MassHighway has installed 20 signs identifying river and stream crossings in Permit Year 5. The locations were identified by Mass Riverways Program and installed by MassHighway personnel. A list of the locations is included in Appendix A of this report.	MassHighway will continue to install signs in areas identified by Mass. Riverways Program.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
1H	Anti-litter/ Dumping Messages on Variable Message Boards	Operations	Maintain anti-litter message in the message mix on permanent Variable Message Boards (VMBs).	Anti-litter messages were included in the message mix on permanent Variable Message Boards.	Continue to include anti-litter messages on VMBs.
1I	Anti-litter/ Dumping Literature at Visitors Centers	Operations	Work with EOEEA's Think Blue Campaign to identify appropriate brochures for use in Visitor's Centers. Distribute literature to appropriate visitor centers and track number of brochures distributed annually.	MassHighway has had extensive discussion with EOEEA's Think Blue Campaign regarding their program and available brochures. MassHighway has discussed the Think Blue brochures with the Visitors Centers.	Order and distribute brochures at Visitors Centers. Maintain count of brochures distributed. Work with Think Blue to develop transportation focus brochure.
1J	New England DOT Meetings	Environmental	Coordinate with New England DOTs to discuss on-going issues and programs being faced by the DOT's including wetland mitigation, storm water and erosion controls.	MassHighway has communicated as the need arose. Formal meetings are no longer ongoing.	MassHighway will communicate with the other DOTs as the need develops.
1K	Storm Water Coordinator	Environmental	Fund a full-time stormwater coordinator position each year.	MassHighway has advertised for this position, conducted interviews and is in the final stages of hiring a full time stormwater coordinator. We expect the staff member to begin in Spring 2008.	Fund full time coordinator.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
Addnl	Baystate Roads	Baystate		Baystate Roads held a "Stormwater in Your Community" series. These classes reviewed the regulatory requirements that Phase II communities need to meet by the end of this permit term (this spring). Both the EPA and the DEP (and MassHighway) gave presentations and talked to municipalities about their progress and need to plan and get started. 176 persons attended these four classes. They were held at : 5/16/07 Marlborough 5/17/07 Tewksbury 5/23/07 Palmer 5/24/07 Fall River	No further action planned.

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 – 2008
2A	Project Related Public Notification and Public Participation Requirements	Environmental	Continue compliance with federal and state public notification and public participation requirements including but not limited to Wetlands Protection Act, Clean Water Act 401 Water Quality Certification, Army Corps of Engineers 404 Permit, and MEPA/NEPA.	MassHighway continues to comply with federal and state public notification and public participation requirements. MassHighway conducted 49 design public hearings in this permit year (see Appendix B).	MassHighway will continue to comply with federal and state public notification and public participation requirements.
2B	Adopt-a-Highway	Adopt-a-Highway	Continue to support program. Document miles cleaned.	MassHighway continues to support this program. Approximately 300 miles of roadway were cleaned by volunteer crews.	MassHighway will continue to support this program.
2C	Project Clean	Project Clean	Continue to support Project Clean.	Revised – see 2C below	Deleted.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
2C Revised	*511 Massachusetts Traveler Information System*	*Operations*	*Maintain 511 System*	*The 511 program received 1,728 calls during the permit year. The calls included 1,468 incidents of debris.*	*The 511 program expects increased call volume and incidents of debris due to increased seasonal travel, outdoor activity, and knowledge of 511 services over the next six months.*
2D-1	MassHighway Web Site	IT/ Environmental	Post Storm Water Management Plan (SWMP) to web site.	The most recent SWMP submitted to EPA in January 2008 is posted on MassHighway's web site.	Post NOI and SWMP submitted for new general permit (when issued) within 60 days of submittal.
2D-2	MassHighway Web Site	IT/ Environmental	Post annual reports to the web site.	Measurable goal complete. Annual reports for Permit Year 1-4 are posted on the Environmental Section's web page.	Permit Year #5's annual report will be posted to the Environmental Section web page for public access within 30 days of submittal to EPA and DEP.
2E	Complete AASHTO's Center for Environmental Excellence on "Strategies & Approaches to Complying with NPDES Phase II Survey"	Environmental	Complete survey.	Completed survey in Permit Year 3.	Measurable goal complete.

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 – 2008
3A-1	Rest Area Leases	Environmental/ Right-of-Way	Develop electronic drainage requirements language for incorporation in Rest Area lease agreements where rest area is being redeveloped.	Submission of drainage information is a standard condition on all new rest area leases.	Measurable goal complete.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
3A -2	Rest Area Leases	Right-of-Way	Summarize new rest area leases issued each year in the annual report.	No new rest area leases were issued during this permit term.	If new rest area leases are issued summarize in annual report.
3B-1	Drainage Inventory	Environmental/ Construction/ Planning/ IT Section	Develop and implement specification for securing drainage information from future construction and redevelopment projects.	Draft of drainage specification has been developed. MassHighway has recently hired an Asset Management director who is reviewing the best way to address the inventory of all of MassHighway assets and the tracking of associated maintenance. The completion of the drainage specification has been temporarily put on hold to make sure that it will be in line with the overall strategy for asset management once developed.	Continue to develop and finalize system. Once Asset Management system is developed, finalize specification and begin to include in contracts.
3B-2	Drainage Inventory	Environmental/ IT/ Districts	Map drainage discharges within urbanized areas. By the end of the permit term complete inventory of urbanized areas and include summary of resource areas with outfalls. Review methods to make outfall inventory available to the public for ease of access.	Outfall inventory has been completed by inventory consultant and submitted to MassHighway. The inventory includes detail regarding 17,862 storm water discharges from MassHighway MS4s within all urbanized areas covered by the general permit. The inventory is included in Appendix C. The inventory includes a summary of the receiving waterbodies including those that are impaired. The inventory database also indicates if the outfall discharges to a resource area as indicated by the MS4 permit. MassHighway is exploring different methods for sharing the inventory with the public and within the Department.	Continue to explore methods for sharing inventory with public and within the Department.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
3C-1	Drainage Connection Policy	Environmental	1.) Issue Drainage Connection Policy. 2) Post copy of policy on MassHighway web site. 3) Enforce the provision through referrals to the Attorney General office. 4) Summarize actions taken in the annual report.	1.) Policy issued and posted on June 26, 2006 by the Chief Engineer – measurable goal complete. 2.) Policy posted at http://www.mhd.state.ma.us//default.asp?pgid=content/environ/envpublications02&sid=about 3.) See Appendix E for details on letters sent to residences/ businesses with potential illicit connections this permit term. .	Continue to enforce provisions of drainage connection policy.
3C-2	Drainage Tie-In Standard Operation Procedure (SOP)	Environmental/ Legal	Issue a revised Drainage Tie-In SOP. Annual reports will summarize drainage tie-in permits applications and permits issued.	MassHighway finalized regulations that pertain to the issuance of permits under C.81, S. 21, including the rules governing drainage tie-ins. Internal draft of Drainage Tie-In SOP is being finalized and reviewed by permit engineers. Appendix D summarizes the drainage tie-in permits applied for and permits received in this permit year.	Finalize Drainage Tie-In SOP. Submit to Chief Engineer for signature and issuance to Department.
3D	Illicit Connection Review	Environmental/ Districts	Review twenty discharges each permit year for potential illicit connections.	BMP Revised	BMP Revised

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
3D Revised	Illicit Connection Review	Environmental/ Districts	Develop prioritized list for IDDE and include in Permit Year 5 Annual Report. Release RFR for development and implementation of IDDE program for watersheds on prioritized list. Field review complaints/ potential IDDEs identified by District personnel, during the drainage inventory, in response to municipal email requesting suspect areas and/ or from public throughout the year.	Districts reviewed potential illicit connections. Letters were sent to eleven potential illicit discharges. The letters state that pipe must be removed from releasing water onto the State Highway. Failure to comply with the Dept. request will necessitate further action by the Department either through the State Attorney General's office or the District. Appendix D includes more detail. MassHighway also sent out an email to the engineering department of municipalities within the MS4permit jurisdiction with MassHighway roads within their boundaries in September 2007. The email asked for feedback regarding any area(s) where the MS4 felt illicit connections would be most likely to occur due to the nature of the parcel's present or historic use, or due to its proximity to the highway. MassHighway is reviewing the responses and will add areas identified to future IDDE work.	Award contract and finalize IDDE protocol. Perform comprehensive dry weather review of 10% of urbanized area roads each year. Field review complaints/ potential IDDEs identified by District personnel, during the drainage inventory, in response to municipal email requesting suspect areas and/ or from public throughout the year. Provide summary of IDDE activity in annual report.
3E	Resident Engineer Illicit Connection Training	Construction	Provide training on illicit connection policy, illicit connection identification and protocol for reporting during annual Resident Engineer training seminars. Summarize # of attendees in annual report.	Action completed in Permit Year 4.	No action required.
3F	Maintenance Staff Illicit Connection Training	Environmental	Provide training on illicit connection policy, illicit connection identification and protocol for reporting during annual training seminars for maintenance personnel.	Action completed in Permit Year 4.	No action required.

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 – 2008
4A	MassHighway Department Project Development & Design Guide	Environmental/ Construction/ Projects	Drainage systems for MassHighway roadways will be designed in accordance with Chapter 8 of the MHD Highway Design Guide and companion manuals.	All MassHighway projects will continue to be designed in compliance with the erosion and sediment control requirements in the design guide.	All MassHighway projects will continue to be designed in compliance with the erosion and sediment control requirements in the design guide.
4B	MA DEP Stormwater Management Policy	Environmental/ Construction/ Projects	New construction and redevelopment activities will comply with Massachusetts DEP's Stormwater Management Policy and Performance Standards under the Wetlands Protection Act and Clean Water Act Section 401.	MassHighway designs continue to comply with the Stormwater Management Policy when projects are subject to the WPA or within urbanized areas.	MassHighway designs will continue to comply with the Stormwater Management Policy when projects are subject to the WPA or within urbanized areas.
4C	NPDES Construction General Permit	Construction	1) File NOIs for new projects which disturb more than one acre. 2) Summarize NOIs issued to MassHighway in annual report.	MassHighway does not track the NOIs filed since many of the District file them themselves. According to the EPA web site, fourteen NOIs were filed during Permit Year 5. Most of the projects initiated during Permit Year 5 were bridge replacement projects which do not disturb more than an acre. The permits are listed in Appendix J.	Continue to file NOIs for new projects which disturb more than an acre.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
4D	Other State Environmental Regulations or Policy	Environmental/ Construction/ Projects	Projects will continue to be designed and constructed in accordance with all applicable state and federal environmental regulations or policy (e.g. Wetlands Protection Act, 404).	The Environmental Section reviews all projects at the 25% design stage to determine what environmental permits are required. The District Environmental Engineer or equivalent District construction staff person attends all pre-construction meetings with the selected contractor to review permit requirements for the project.	The process of design review and pre-construction coordination will continue.
4E	MassHighway Storm Water Handbook	Environmental/ Construction/ Projects	Design projects in urbanized areas in compliance with Handbook	MassHighway requires that all new construction and redevelopment activities undertaken by MassHighway, or by others that are funded in whole or in part by MassHighway, comply with the Handbook.	MassHighway will require that all new construction and redevelopment activities undertaken by MassHighway, or by others that are funded in whole or in part by MassHighway, comply with the Handbook.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
4F	Standard Specification for Highway and Bridges	Environmental/ Construction/ Projects	Continue to include erosion and pollution prevention controls in construction contracts.	Inclusion of such controls is standard practice for construction contracts issued by MassHighway. A revised contract item/ specification has been drafted which requires an Erosion Control Plan for all projects (except minor - such as signage, grass mowing, etc.). The intent was to have the Contractor prepare the Plan as they would have the most knowledge of the proposed operations and schedule. However, DEP recently revised their Stormwater Handbook and has indicated that an Erosion Control Plan should be submitted during design along with the permit applications. MassHighway has requested clarification on the process to be followed but has received no response as yet.	Such controls will continue to be included in construction contracts issued by MassHighway. Work with DEP to finalize revised contract item/ spec regarding the Erosion Control Plan.
4G	MassHighway Research Needs Program	Environmental/ Construction	Continue funding the MassHighway Research Needs Program.	MassHighway participated in a Research Needs Study regarding the Ability of Wood Fibers to Attenuate Heavy Metals Associated with Highway Runoff. MassHighway has developed a draft Request for Response (RFR) for a research study regarding Critical Operational Factors that Affect Road Salt Usage and the Effectiveness and Efficiency of Salt Spreading Operations and Equipment. MassHighway has committed $300k for funding of this study.	MassHighway will finalize the RFR proposal for this research study, make consultant selection and enter into contract. Begin study.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
4H	Pre-Construction Meeting Review of NPDES Construction GP requirements	District Environmental Staff/ Construction	District Environmental Staff Review NPDES requirements at the applicable pre-construction meetings. These meetings include outlining the requirements of the Construction General Permit and identify the roles and responsibilities of MassHighway and the Contractor.	MassHighway reviews the NPDES Construction GP requirements with Contractors at the pre-construction meeting. Environmental engineer attends all pre-construction meetings which involve environmental permits, not limited to NPDES. Therefore, erosion control discussed at all pre-con meetings.	MassHighway will continue to review the NPDES Construction GP requirements with Contractors at the pre-construction meeting.
4I	Contract Bid Item and Special Provision for Storm Water Pollution Prevention Plans (SWPPPs)	Construction Section/ Contracts	Prepare a Contract Bid Item and Special Provision for inclusion in construction contracts to be advertised for bids which exceed the one-acre disturbance threshold.	Measurable goal complete.	A revised contract item/ specification has been drafted which requires an Erosion Control Plan for all projects (except minor - such as signage, grass mowing, etc.) instead of just on those that disturb more than an acre. The intent was to have the Contractor prepare the Plan as they would have the most knowledge of the proposed operations and schedule. However, DEP recently revised their Stormwater Handbook and has indicated that an Erosion Control Plan should be submitted during design along with the permit applications. MassHighway has requested clarification on the process to be followed but has received no response as yet.
4J	Field Guide on Erosion Prevention and Sediment Control	Construction Section/ Chief Engineer	Prepare field guide and issue to Resident Engineers	State Guide development is 90% complete.	Final completion and circulation for internal approvals will be completed by September 2008. MassHighway is incorporating additional information on innovative controls and new material.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
4K	Storm Water Pollution Prevention Plan (SWPPP) Guidance Manual for Contractors	Construction Section/ Districts	Prepare a SWPPP Guidance for Contractors document on MassHighway construction projects. Implement use of the document on all appropriate MassHighway projects. Once contractors begin to use the document, it may be revised if necessary to address input received internally and from agencies. Ultimately the document will be converted into a computer program.	Measurable goal complete in Permit Year 4.	Continue use by Contractors on MassHighway projects. Modify as necessary when SWPPP Contract Item is revised to Erosion Control Plan item for all projects.
4L-1	Training	Construction Section	Conduct annual Erosion Prevention and Sediment Control Training for MassHighway Construction Personnel. Summarize # of attendees and topics covered.	Construction Division trained 237 staff members this year. The training included a review of critical permit conditions, alternative erosion control measures, issues from MH units, and issues from other agencies. Below is a list of seminar dates and # attending: District 5 1/28/08 48 people District 2 2/11/08 52 people District 3 2/14 /08 50 people District 1 2/20/08 31 people District 4 3/06/08 45 people District 4 3/07/08 11 people	MassHighway will include training on Erosion Prevention and Sediment Control in the annual training seminars given each winter.
4L-2	Non-Traditional Erosion Control Specifications	Landscaping/ Construction Section	Develop specifications for non-traditional erosion controls and evaluate research being conducted by other state DOTs that can be accepted by MassHighway Research and Materials Section. As new technologies are developed, review and develop specifications for additional erosion controls.	MassHighway has not developed any new specifications during this year.	Develop construction specs when appropriate.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
4M	Erosion and Sediment Control Field Tests	Construction Section/ Districts/ Landscaping	Perform field tests of new erosion and sediment control materials on MassHighway projects. Prepare and circulate an internal memo on the effectiveness of the new measure.	Worked performed at Waltham Winter Street project is ongoing. Project has used fiber rolls with flocculent in high silt environment.	Develop internal memo regarding effectiveness once project is complete.
4N	Construction Bulletins	Construction Section	Issue annual construction bulletins to each District regarding storm water issues.	Annual bulletin was issued in October 2007. The bulletin included winter shutdown, site stabilization and record keeping.	Issue bulletin in Fall of 2008 regarding operational controls, concrete washout stations, and stockpile controls.
4O	Solicit Construction Activity Feedback from Public	Construction Section/ IT	Maintain MassHighway web site to include contact information for ongoing construction activities. Respond to concerns submitted in a timely manner.	MassHighway maintained their website to include contact information for ongoing construction activities. MassHighway responded to concerns submitted in a timely manner.	MassHighway will continue to maintain their website to include contact information for ongoing construction activities. MassHighway will respond to concerns submitted in a timely manner.
4P	Construction Runoff Control Enforcement	Construction Section/ Districts	Non-compliance with the CGP and SWPPP as well as non-compliance with any applicable environmental permits will be addressed through the District Construction personnel and District Highway Director and can include monetary penalties, where included in contracts, and deductions or delays in payment, when warranted.	Quality assurance inspections were completed on active construction projects by the Boston Construction office and by the District Environmental staff. No payments were withheld this year.	Continue to address non-compliance through monetary penalties or deductions or delays in payment, when warranted.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
4Q	Standard Practices Memo	Construction Section	MassHighway will prepare and issue a Standard Practices memo to Construction Engineers on the protocol for Illicit Discharge Detection and Elimination during construction projects.	A separate SOP for construction was not developed. The District Construction offices were provide with a memo dated June 16, 2006 regarding the procedures to follow on discovery of any illicit discharges during construction. Winter RE training included discussion of the policy and procedures to follow (BMP 3E). A separate SOP is not warranted	No further action warranted.
4R	Contractor Inspector Training	Construction Section	Modify NPDES SWPPP item to include half day training requirement. Provide training programs.	MassHighway is waiting to hear back from DEP on their request for interpretation regarding the SW Policy requirements for Erosion Control Plan item before revising the SWPPP item.	Include half day training when SWPPP item is revised to be a Erosion Control Plan item instead.

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 – 2008
5A-1	MassHighway Storm Water Handbook	Environmental	Secure DEP ratification for MassHighway Storm Water Handbook.	Measurable goal complete.	Measurable goal complete.
5A-2	Revise Ch. 4 of the MassHighway Storm Water Handbook	Environmental	Revise Chapter 4 within 9 months of DEP's SW Policy Handbook update being released. Reissue MassHighway Handbook to Designers within 1 year of DEP's document being released.	DEP's Storm Water Policy has been released.	Revise Chapter 4.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
5A-3	Revise Ch. 5 of the MassHighway Storm Water Handbook	Environmental	Revise Chapter 5 within 9 months of DEP's SW Policy Handbook update being released. Reissue MassHighway Handbook to Designers within 1 year of DEP's document being released.	DEP's Storm Water Policy has been released.	Revise Chapter 5.
5B	MassHighway Roadway Maintenance Program	Maintenance	Continue to implement MassHighway maintenance program as outlined in the maintenance schedule and in accordance with TMDL watersheds specific agreements.	MassHighway maintained their roads in compliance with the maintenance schedule included in the SWMP and TMDL watershed specific agreements. A summary of this year's maintenance for each district is included in Appendix F.	MassHighway will continue to conduct maintenance on its roadways as outlined in the maintenance schedule and in accordance with TMDL watersheds specific agreements.
5C	Technology Acceptance and Reciprocity Partnership (TARP)	TARP	Continue to work with DEP to develop review protocol for innovative stormwater BMPs. Summarize meeting(s) attended and agenda in annual report.	MassHighway staff participated in proprietary system sub-committee meetings sponsored by MA DEP as part of the SW Policy update. The meetings included developing protocols for analyzing field and lab tests of the systems. TARP was discussed at these meetings.	No activities planned.
5D	Southeast Expressway BMP Effectiveness Project	Environmental	Conduct a study of the effectiveness of water quality inlets (WQIs) and catch basins at removing suspended sediments from highway runoff..	Study completed previously. The 14-month sediment removal efficiency was 35 % for one WQI and 28% for the second WQI. The efficiency for individual storms for deep sumped hooded catch basins was 39%.	No further action planned.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
5E	Highway Runoff Contaminant Model	Env. Div. Consultant	Develop and calibrate contaminant loading model.	Collection of flow data and samples of highway runoff ended in September of 2007 by MassHighway's consultant, as all data objectives were met. The consultant analyzed data for the four primary highways to determine statistically differences as a result of average daily traffic. Data for the four primary highways were compared to the four tests sites to determine the transferability of the primary data set to other areas within Massachusetts. They compiled all quality-assurance data to determine the accuracy and precision of the data set.	The consultant will prepare a draft report detailing the project monitoring and sampling methods and the results of the study. They will also populate the recently developed Federal Highway highway-runoff database (HRDB Version 1.0), which is a preprocessor for the Stochastic Empirical Loading and Dilution Model (SELDM) currently under development with the Federal Highway Administration, under a separate funding agreement.
5F	*BMP Maintenance Manual*	*Environmental/ Maintenance*	*Develop BMP Maintenance Manual to be used as a field guide by maintenance personnel Provide training on the BMP Maintenance Manual..*	*Remove. Changes to BMP 5B narrative include the manual used as guidance by maintenance staff while performing drainage system maintenance.*	*No further action.*
5G	Right of Way Parcel Evaluation	Environmental	Develop and implement a program of evaluating parcels which are candidates for disposal by MassHighway for their potential in siting storm water BMPs.	MassHighway has developed and will implement a methodology for evaluating candidate parcels for their storm water management potential. Environmental reviewed 22 canvasses and was able to add BMP storm water language to 3 canvasses.	Continue to implement methodology. Environmental reviews an average of approximately 20-25 canvasses per year.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
5H-1	Post Construction Runoff Enforcement-Illicit Discharge Prohibition Policy	Commissioner/ Legal/ Environmental	1) Develop policy for addressing unauthorized connections to the MassHighway's drainage system. 2) Enforce the provisions through referrals to the Attorney General. 3) Summarize actions taken in annual report.	Illicit Discharge Policy was issued in June 2006. Letters were sent to eleven potential illicit discharges The letters state that pipe must be removed from releasing water onto the State Highway. Failure to comply with the Dept. request will necessitate further action by the Department either through the State Attorney General's office or the District. Appendix D includes more detail.	Enforce Illicit Discharge Prohibition Policy. Follow up on potential illicit discharges where enforcement letters have been sent.
5H-2	Post Construction Runoff Enforcement- Drainage Tie-In Policy	Commissioner/ Legal/ Environmental/ Districts	Develop permitting process for adjacent properties which would like to tie into MH drainage system. Implement program and summarize actions taken under program in annual report.	MassHighway finalized a set of regulations that pertain to the issuance of permits under C.81, S. 21. This included the rules governing drainage tie-ins. Internal draft of Drainage Tie-In SOP is being finalized and reviewed by permit engineers.	Finalize Drainage Tie-In SOP. Submit to Chief Engineer for signature and issuance to Department.
5H-3	Post Construction Runoff Enforcement- Offsite Pollution to MH Drainage System	Commissioner/ Legal/ Environmental	Runoff not meeting the NPDES MS4 requirements which is reaching the MH MS4 and is not covered under 5H-1 or 5H-2 may be considered trespassing and referred to the AG's office by MassHighway counsel at the DHD's discretion.	No post construction runoff enforcement which met this requirement was necessary during Permit Year 5.	MassHighway will continue to follow these requirements, when necessary.
5I	Rest Area Redevelopment to Meet Stormwater Management Handbook Standards	Environmental/ Right of Way	Add language to new lease agreements requiring lessees, who redevelop or build new buildings on rest area property leased from MassHighway, to meet the standards within the Storm Water Management Handbook and the SWMP requirements.	Measurable goal complete.	No action required.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
5J	Transportation Evaluation Criteria	Planning/ MPOs	Continue to include environmental considerations in the funding prioritization evaluation.	MPOs continued to include the environmental component in their evaluation procedures.	Continue to include environmental component in evaluation procedure.
5K	Federal Enhancement Funding	Planning	Explore opportunities for using Federal enhancement funding for environmental restoration and pollution abatement projects. Participate in quarterly committee meetings.	MassHighway is exploring the potential for projects with regional Planning agencies to develop projects using federal enhancement funding for stormwater.	MassHighway will continue to explore the potential for projects with regional Planning agencies to develop projects using federal enhancement funding for stormwater. MassHighway will summarize project in annual report. MassHighway will begin to participate in quarterly committee meetings.

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	Planned Activities – 2008
6A-1	Source Control - 511 Massachusetts Traveler Information System	Project Clean/ Operations	Maintain the existing 511 System.	MassHighway continues to support this system.	MassHighway will continue to support this system.
6A-2	Source Control – Adopt-a-Highway	Adopt-a-Highway/ Operations	Continue to support this program by maintaining signs in areas where the program is active. Summarize number of road miles cleaned..	MassHighway continues to support this program. 300 miles were cleaned during this permit term.	MassHighway will continue to support this program.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6A-3	Source Control - Deicing Programs and Reduced Salt Areas	Environmental/ Districts	Continue to support De-icing and Reduced Salt Areas Programs.	MassHighway will continue to support the De-icing and Reduced Salt Areas Programs. Approximately 5% of deicer used in Winter 2008 was derived from alternative technology. See Appendix H for more information on well replacements and Salt Remediation Program (BMP 6G).	MassHighway will continue to support the De-icing and Reduced Salt Areas Programs.
6A-4	Source Control – Motorist Assistance Program (formerly HELP)	MAP Program/ Operations	Continue to provide 22 Highway Emergency Locator Program (HELP) vans and/or tow trucks.	MassHighway has continued to provide 22 roving service patrols or tow trucks and has assisted over 22,000 motorists in Permit Year 5 in the areas of Boston, Worcester, and Springfield. This service not only assists disabled motorists also reduces traffic congestion.	MassHighway will continue to provide 22 roving service patrols or tow trucks.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6A-5	Source Control - VMP	Environmental	1) Develop a generic Vegetation Management Plan (VMP) which outlines methods of minimizing the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers. 2) Prepare a Yearly Operational Plan (YOP) by April of each year. 3) Post YOP on web site within 30 days. 4) Summarize actions taken in previous year in annual report.	MassHighway completed a revised statewide 2003-2007 VMP in June 2003. 2206/2007 YOP was prepared and submitted to DAR and cities and towns in April of 2007. Contracts for District 2, 3, and 5 were advertised in April of 2007. Contracts were not executed and no spraying occurred in 2007. Contracts were extended through 9/30/08. 2007 YOP was posted online by Boston IT in April of 2007. MassHighway has developed a draft Herbicides Alternative Research report in May 2007. The study looked at the use of alternatives to herbicides and the efficacy on the type of roadside vegetation which herbicides are used on by MassHighway. The report found that because of the cost of materials and need for repeated seasonal applications, all of the alternative practices reviewed would cost more than the use of conventional herbicides. The alternative practices will be useful and the cost will be justified in situations where the use of conventional herbicides is undesired or prohibited.	Five year VMP was submitted to Boston in March and is still being considered and evaluated in-house prior to submitting to DAR for approval in April. Water Supply and well information has been requested from affected communities. New Requests for Determinations of Applicability have been filed with the various Conservation Commissions. Spraying in District 2, 3, and 5.
6A-6	Source Control - HOV	Planning	Continue participation in ridesharing activities through the duration of the permit term.	MassHighway continues to support this program	MassHighway will continue to support this program.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6A-7	Source Control - Alternative Transportation	Planning	Provide technical assistance and funding for bicycling and walking, including on-road and off-road improvements, at the local level.	The Safe Route to School (SRTS) Program executed a contract with a consultant team for $1,231,000 to assess conditions, develop plans, and obtain permits for up to 40 infrastructure projects to improve access and safety for children walking and bicycling to school. Six bike path projects were advertised by MassHighway from 04/01/07 to 03/31/08. The 6 projects had a total federal participating cost of $20,888,344. The projects include: 1. Chelmsford-Lowell-Westford: Construction of The Bruce Freeman Memorial Bike Path 2. Mattapoisett – Multi-use Path Construction from Fairhaven town line to Mattapoisett Neck Road 3. Northampton – Bike Path Construction on State Street 4. Falmouth – Shining Sea Bike Path Construction from County Road to Carlson Lane 5. Gardner-Winchendon – Pedestrian & Bike Trail Construction 6. Newburyport – Multi-use Trail Construction	Additional funding is expected to be assigned to constructing improvements related to access and safety for children walking and bicycling to school.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6A-8	Source Control- Highway Safety	Highway Design	1) Incorporate safety measures into all new highway designs. 2) Provide signage to warn of vehicle hazards including tipping hazards and steep grades. 3) Install VMS on selected roadways to improve driver awareness. 4) Include evolving safety technologies as part of future highway design projects as they are developed.	Safety measures are included in all new highway designs including appropriate signage and evolving technologies. MassHighway installs and maintains vehicle message signs on select roads to improve driver awareness to potential safety hazards.	MassHighway will continue to support this program.
6A-9	Source Control - TURA	Environmental	1) Maintain an active PPTF throughout the permit term. 2) Provide summary of actions taken on each pollution prevention initiative included in the SWMP in the annual report.	Active PPTF was maintained. No water conservation activities in 2007. MHD made a pilot installation of an automated automotive fluid dispensing rack, to minimize spillage during transfers from drums to vehicles.	MassHighway will continue to support this program.
6B-1	Employee Training	MTAP/ Baystate Roads	Continue to support MTAP and Baystate Roads program.	MassHighway continues to support these programs. Specific programs sponsored by these programs are discussed in BMP 1D-1 and 1D-2.	MassHighway will continue to support these programs.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6B-2	Employee Training	Environmental	Provide annual training to at least 300 maintenance facility personnel regarding good housekeeping/ spill prevention.	Trainings were provided during the winter of 2007/2008 for 309 maintenance facility personnel. Training included discussion of the following topics: • Hazardous Waste • Hazardous Materials • Universal Waste • Asbestos • Solid Waste • Roadside Issues • Tanks (Stage I and II) • Vehicle Washing • Wetlands • Recordkeeping • Inspections • Water Quality • SOPs • Spill Prevention • Emergency Response **District 1:** District 1 did not have training during this permit year. **District 2:** On January 29th, 2008 MassHighway staff provided Environmental Awareness Training to 65 District employees. **District 3:** On November 20, 28 and 30th and December 6 and 19th of 2007, trainings were provided for 44 personnel. *(continued below)*	MassHighway will again provide annual training to maintenance facility personnel regarding good housekeeping practices and spill prevention.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6B-2 cont'd				**District 4:** On November 13, 14, 15, 27, 28 and 29th MH staff provided Environmental Awareness training to 118 MassHighway staff. **District 5:** Trainings were provided on November 5, 7 and 9th of 2007 for 82 maintenance facility personnel.	
6B-3	Employee Training	Highway Operations	Provide annual training to at least 200 supervisors and drivers annually on the latest on snow and ice removal.	Snow and Ice Trainings were held for each of the 5 districts. Over 500 state personnel attended classes held between September and December of 2007. Topics covered included operations, chemical application, communications, environmental impact, policy and procedures. Snow and Ice Tailgate Training held for over 200 private contractors and 100 state personnel. Topics covered included environmental impact of salt in sensitive areas, proper storage, proper handling, proper application, attention to detail, and improved use of anti-icing techniques.	MassHighway will again provide annual training on the latest techniques, equipment and material available for snow and ice removal at a similar level to Permit Year 5.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6B-4	Employee Training	Highway Operations	Ensure all equipment and vehicle operators have received training on the proper operation of the equipment and vehicles they operate.	MassHighway performed sweeper training for operators of the 3-wheel Pelicans & 4-Wheel Eagle Elgin Sweepers. MassHighway includes statewide training by the vendor whenever purchasing any new Heavy or Specialized Equipment. Training includes operational, mechanical and safety on that particular piece of equipment. Elgin Sweeper Train. Co. (C.N. Wood co) was performed statewide in each District Office between 2/26/07—3/2/07. Operational, mechanical, and safety for 76 MassHighway employees. Traffix/ NES/LC Company provided Trailer Type Crash Attenuators-Demo/Training in Bridgewater on 2/23/07. Twenty maintenance and Boston personnel received operational, mechanical and safety training for the attenuators. MassHighway is currently exploring statewide training on our Vactor Trucks (Catch Basin Cleaning Equipment).	Provide training for VactorTrucks, Sterling S&I Trucks, Ford Electricians Aerial Trucks. And Trailer type Crash Attenuators. MassHighway has a Safety, & Emissions Mobile Truck, that performs their annual required Safety and Emissions Inspections on Heavy Equipment Statewide, with our Licensed Inspectors in each District. We are canvassing the Districts for additional inspectors; they will require training through DEP & RMV.
6C-1	Maintenance	Districts	Continue to implement maintenance schedule outlined in Appendix E of the SWMP.	MassHighway continued to maintain the highway system through catch basin cleaning contracts, street sweeping and regular drainage system maintenance. See Appendix F for district by district summary of compliance.	MassHighway will continue to maintain the highway system through catch basin cleaning contracts, street sweeping and regular drainage system maintenance in compliance with Appendix E of the SWMP.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6C-2	Maintenance	Districts	1) MassHighway reviewed each of the maintenance and material storage yards and creates a site specific facility handbook that provides information on necessary steps to environmental compliance. 2) Post EMS Manual on MassHighway website for public information. 3) Post generic Facility Handbook on website for public information.	Site specific facility handbooks were created in 1995. The EMS Manual and the Facility Environmental Handbook were both posted on the MassHighway web site.	MassHighway will continue to maintain environmental compliance at their maintenance facilities by complying with each facility's Environmental Facility Handbook. Both the EMS Manual and the Facility Environmental Handbook are in the process of revision.
6C-3	Maintenance Record and Data Management Work Management System	Environmental	1) Develop work management system. 2) Populate program with infrastructure information as available. 3) Implement system and begin to record maintenance activities in these watersheds.	MassHighway is in the process of developing an asset management system. The system will include a work management system.	Continue to develop system.
6D	Waste Disposal	Districts	1) Street sweeping waste will be reused in appropriate slope stabilization and road work projects in compliance with SOP, when appropriate. 2) Street Sweeping material which can not be reused will be disposed of at landfills as daily cover. 3) Waste material from drainage structures and storm water BMPs removed during maintenance will be disposed of according to "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills" DEP Policy #COMM-97-001.	MassHighway and its contractors continue to properly dispose of waste. MassHighway did not have an appropriate opportunity to reuse street sweeping waste.	MassHighway and its contractors will continue to properly dispose of waste.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6E - Revised	*Good Housekeeping/ Pollution Prevention Program Evaluation*	*Environmental*	*Evaluate existing Maintenance Programs to determine additional or revised activities, which would increase effectiveness and usefulness of the programs.*	*BMP 6E Good Housekeeping/ Pollution Prevention Program Evaluation has been removed (and the subsequent BMPs renumbered) since the addition of BMP 6F through 6Q provide a better use of resources with an increased impact on meeting the good housekeeping and pollution prevention minimum control measure.*	
6E	Catch Basin Accumulation Project	Environmental/ Maintenance/ Districts	1) Provide annual report on progress each December and include summary in annual report. 2) Complete a study of debris accumulation in catch basins. 3) Based on the results of the study, revise the existing cleaning schedule and SOP for catch basin cleaning.	MassHighway developed a six month qualitative analysis of the monitoring in May 2007 (Appendix G). MassHighway has prepared a draft Year 1 summary report but has not finalized and is waiting to include Winter 2007/2008 data.	Complete Year 1 summary report with winter 2007/2008 data added.
6F	Policy and Program Review	Environmental	MassHighway will continue to at least biannually evaluate its snow and ice control policies and operational programs in order to make adjustments based on data and experience, and to respond to changing conditions.	As outlined in BMP 6G, MassHighway has made many changes to its snow and ice control program this last year. On Cape Cod, we reduced our sand to salt ration from 4:1 to 1:1 as of September 1, 2007 We also analyzed data and found reduced salt zones have significantly less material than other spreader routes. Areas reviewed in Boxford, Andover and Middleboro all used 15-20 % less material compared to other routes in the area.	Continue to evaluate program and implement changes as determined beneficial. MassHighway will add 60 liquid tanks to assist in pre-wetting and anti-icing activities.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6G	Salt Remediation Program	Environmental. Maintenance/ Districts	Continue to provide the Salt Remediation Program with a funding level appropriate to quickly address salt related complaints.	Actions taken to minimize salt-related impacts to the environment include tailgate training; water treatment installation, sampling and analysis; well rehabilitation and replacement; Plymouth/ Mann Bog Cranberry study and discontinued use of CMA; additional sampling of cranberry bogs; and verification of previous cranberry studies. More information is available at http://www.mhd.state.ma.us/default.asp?pgid=SnowIceIndex&sid=level2 An updated version of the Public Well Supply Matrix included in the January 2008 SWMP is included as Appendix H of this annual report to summarize the current status of each public well included in the Salt Remediation Program.	Cambridge water supply sampling coordination, wheel based friction meter purchase for salt application decision making ($30k), Andover run-off study, expansion of use of magnesium chloride, salt program problem statement principal investigator selection and implementation, Dedham-Westwood Aquifer Study, expansion of liquid deicing capacity by 300,000 gallons (Total Budget $1M).
6H	Clean Well Initiative	Environmental	Provide a continued level of funding that will allow MassHighway to complete up to 20 replacement wells per year.	MassHighway replaced a total of eight wells this year based on need. The wells were located in Wildwood Lounge, Upton; Antczak, Boxford; Tritt, Boxford; Warwick, Otis; Keech/King, Northfield; Longtine, Wilbraham; Hickok, Charlton; and Connery, Boxford (with treatment). An updated version of the Public Well Supply Matrix is included as Appendix H of this annual report to summarize the current status of each public well included in the Clean Well Initiative Program.	Continue sampling and analysis. Casamassa-Sterling waterline, existing well abandonments and site work, further well replacement and treatment installation, complete Fallong-Franklin well ,complete Ash-Boxford well. Carozza-Boxford drainage installation well rehabilitation, complete Baessler-Topsfield well, Morris-Clarksburg well rehabilitation, complete Quarter Keg Pub-Charlton well, Papirio-Belchertown water treatment.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6I	Salt Management and Storage	Operations	MassHighway will continue to replace or repair inadequate salt storage sheds, as well as cover sand piles and/or move them out of wetland buffer zones. **Review sheds:** Increased capacity of some sheds may be justified because salt storage needs have grown over time and/or because the shed is in a sensitive area and the salt loading operations call for better containment. In sensitive areas, consideration should be given to the use of Gambrel style sheds that provide for the entire operation to be conducted under cover to minimize salt spillage outside of the shed. MassHighway will continue to prioritize the identification and selection of parcels being considered for new salt storage facilities, considering operational needs and the environmental setting. *Cont'd*	All Districts repaired various salt sheds throughout the state. MassHighway reviewed salt sheds at Chelmsford, Boxford and Andover sites. MassHighway has a facility repair contract(s) in place to provide for necessary repairs.	MassHighway will inspect fabric sheds for repair needs. MassHighway will maintain the facility repair contract(s) to provide for necessary repairs.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6I cont'd			**Review Sand Piles:** MassHighway will strive to locate sand piles outside wetland buffer zones whenever space allows. However, when this is not possible the department will work towards storing sand piles under cover, especially during the non-winter months. This could be accomplished by storing sand within sheds or, more likely, using a heavy-gauge polyethylene tarp. The tarp could be peeled back once, before winter operations, and then covered again at the end of the season.	MassHighway is making every effort to reduce the amount of sand we spread. The stockpiled sand currently is not covered but we are looking to find pricing for fabric covers. Because of operational challenges, we do not currently use tarps. MassHighway makes every effort to stockpile sand outside the wetland buffer zones.	Continue to look into fabric covers for sand.
			Personnel: In October 2006, MassHighway hired a Director of Snow & Ice Operations, with over 20 years of experience in winter operations, to improve salt management and supervision of deicing operations.	Director has continued to improve salt management and supervision of deicing operations.	Director will continue to oversee salt management and supervision of deicing operations.
6J	Salt Storage Best Management Practices/ Pollution Prevention	Environmental	Continue to implement salt storage in compliance with DEP Guidelines on Deicing Chemical Storage. Continue to follow MassHighway SOP for the Management of Sand and Deicing Chemicals at MassHighway Facilities. Continue to follow Facility Environmental Handbook guidelines at maintenance facilities.	At all of our training activities, including the tail-gate training sessions, MassHighway emphasizes the need for continual attention to "Good House Keeping " and attention to detail is enforced.	We will continue to work with our personnel and hired contractors to follow all SOP'S relative to salt handling, storage and proper application.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
6K	Equipment Improvements	Environmental	MassHighway will continue to expand the use of anti-icing as a standard tool for snow and ice control.	MassHighway used 143 tanker trucks with spray bars this winter season. This is a 10-15% increase from the 2006/2007 winter season.	MassHighway will continue to utilize spray trucks. We will increase the number of trucks when storage tank capacity increases. MassHighway will add 60 liquid tanks to assist in pre-wetting and anti-icing activities.
6L	Enhanced Weather Forecasting Information	Environmental	Continue to provide sufficient funding to use weather forecasting contractor to provide up-to-date and local weather information during snow and ice season.	MassHighway has a 5 year contract with DTN for our weather reporting. It is funded at approximately $29,000 each year DTN and MassHighway hold monthly conference calls to discuss how well the forecasting is working.	Continue to improve forecast for upcoming snow and ice season and hold training for our personnel.
6M	Road Weather Information System	Environmental	MassHighway will ensure that these stations will be maintained so as to remain fully functional.	All sites have been maintained. MassHighway receives weekly status reports from the contractor in charge of the RWIS systems (Quixiote) and communicates every month with them	The systems will be receiving ongoing maintenance throughout the summer to provide the system with the most up to date modifications.
6N	Alternative Technologies	Environmental	MassHighway will continue to maximize the use of Premix and liquid calcium chloride, as alternative deicers, to reduce the quantity of granular sodium chloride, and should closely monitor reduced salt zones during storms to ensure the proper timing of salt applications and to minimize the potential for overuse of deicing chemicals.	Pre-Mix made up approximately 5% of our salt use throughout the state. We used and monitored the use of pre-Mix in our reduced salt zones.	We will continue to use Pre-Mix and other alternative dicers in conjunction with Reduced Salt Zones.
6O	Research	Environmental	MassHighway has joined Clear Roads program and will continue to explore moving forward on other projects. Summarize research performed.	Completed research on the best "ground speed controllers" for applying salt.	Will complete research on 1) new methods of removing snow with a multi-blade plow and 2) the use of new chemicals for de-icing and anti-icing applications.

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 5	Planned Activities – 2008
7A	Wetland Protection Act (WPA) Compliance	Environmental	1) All MassHighway projects will comply with the WPA and MESA. 2) When potential impacts are identified, MassHighway will work with the appropriate agencies to design the project to minimize the impacts.	Continue to comply with MESA as required by the WPA.	Continue to comply with MESA as required by the WPA.
7B	401 Water Quality Certification	Environmental	Massachusetts's 401 Water Quality certification requirements, which include review of the project by MA Natural Heritage program and US Fish and Wildlife if endangered species habitat is mapped in the project vicinity, will be complied with whenever they are applicable.	Continue to comply with MA 401 Water Quality Certification Regulations.	Continue to comply with MA 401 Water Quality Certification Regulations.
7C	CE Checklist	Environmental	Complete a Categorical Exclusion Checklist for all MassHighway projects that utilize federal funds.	Complete this checklist at 25% design stage for project that receives federal funds.	Complete this checklist at 25% design stage for project that receives federal funds.
7D	Environmental Site Data Form	Environmental/ Construction	Develop an environmental site data form for review by designers with Environmental staff at 25% Design. Implement on all projects.	MassHighway has prepared this form to review potential impacts of a project to a variety of resource areas as part of compliance with the NPDES Construction and MS4 general permit. This form includes review of discharges for potential impact to, ORWs, sensitive areas, endangered species and impaired waters, waterbodies with approved TMDLs. A draft form has been developed and is being reviewed internally.	Finalize form and begin to implement at 25% design stage.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
7E	TMDL Recommendation Summary Table Update	Environmental	The TMDL Recommendation Summary Table of the annual report will be updated annually to reflect which reports have been finalized in the previous permit year and include progress on any related measurable goals.	Appendix I includes the updated table with description of measures to meet TMDL recommendations.	MassHighway staff members and Commissioner will meet with DEP Commissioner in April 2008 to discuss how MassHighway can be more involved in the development of TMDLs which include implementation measures for MassHighway. MassHighway wants to be part of the development of the TMDL instead of having measures included in the reports without any MassHighway's coordination. Continue to review draft and new TMDL reports and implement TMDL recommended activities when possible.
7F – 7Q	TMDL Specific Recommendations	See NOI		Comply with TMDL recommendations in table in Appendix I.	
7R	TMDL Watershed Review	Environmental	Develop prioritized list of TMDL watersheds to assess based on pollutants and MassHighway contributing areas. Assess 20% of watersheds with TMDLs each year once the USGS Contaminant Model is completed (scheduled for December 2008). Summarize assessment and outcome, including implementation schedules for BMPs if determined necessary, in each annual report.	MassHighway is in the process of finalizing an RFR for this work. MassHighway has committed 1.3 million dollars for the contract.	Finalize RFR. Issue RFR and award to consultant. Develop priorities list of TMDL watersheds based on contributing areas. Complete USGS model by December 2008.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5	Planned Activities – 2008
7S	Salt Remediation Program	Environmental	Continue to provide the Salt Remediation Program with a funding level appropriate to quickly address salt related complaints.	MassHighway Salt Remediation Program (ISA 38721) included approximately $960K on "complaint" and "policy" tasks during FY08 (7/1/07 to 6/30/08). Overall ISA 38721 Salt Remediation Program budget is $5.9 million including site study task and operation between 3/11/05 through 12/31/08. MassHighway feels this budget has been appropriate to address salt related complaints quickly.	Continue to provide similar budget for "complaint" and "policy" tasks during FY09.
8A	Cultural Resources Review	Cultural Resources Department	Review all projects for impacts to historic properties at the 25% design phase. If a potential impact is found, the Department works with the designer (MassHighway or consultant) and Massachusetts Historical Commission to alter the design to mitigate or prevent adverse effects.	Measurable goal met. There have been no instances during the past year where storm water impacts have adversely affected any National Register-listed or eligible parties.	Continue to review projects for impacts to historic properties at the 25% Design Stage. If a potential impact is found, the Dept. works with the designer and MHC to alter the design to mitigate or prevent adverse effects.

7b. WLA Assessment

Projects within a watershed with an approved TMDL are most likely subject to the Wetlands Protection Act (WPA). MassHighway projects which are subject to the WPA strive to meet the WPA's Stormwater Policy to the greatest extent possible. Meeting the requirements of the Stormwater Policy should provide sufficient water quantity and quality controls to reduce pollutant loading to the impaired waterbodies. The attached table tracks the projects within approved TMDL watersheds and summarizes the controls implemented to meet the TMDL requirements. New design and construction projects which are proposed within a TMDL watershed will incorporate measures to meet the TMDL requirements.

Part IV. Summary of Information Collected and Analyzed

Appendix C includes the completed drainage inventory database. Appendix G includes information collected as part of the catch basin accumulation study.

Part V. Program Outputs & Accomplishments (OPTIONAL)

MassHighway's accomplishments during the fifth permit year are summarized in Part 1- 4 of this annual report.

Appendix A: River and Stream Signs Installed in Permit Year 5

River and Stream Crossing Signs Installed by MassHighway during Permit Year 5

Road	River	Town
Route 128 bridge	Crane River	Danvers
Route 123/138 bridge	Queset Brook	Easton
Route 202 bridge	Millers River	Winchendon
Route 16 bridge (2 locations)	Mystic River	Medford
Route 116 bridge	South River	Conway
Route 116 bridge	Mill River	Conway
Route 3 bridge	Monatiquot River	Braintree
Route 3 crossing	Mill River	Weymouth
Route 3 crossing	Old Swamp River	Weymouth
Route 3 bridge	North River	Marshfield
Route 3 bridge	South River	Marshfield
Route 3 bridge	Jones River	Kingston
Route 3 crossing	Town Brook	Plymouth
US 6 crossing	Herring River	Bourne
US 20 bridge	Hop Brook	Sudbury
Route 1 bridge	Little River	Newbury
Route 7	Konkapot River	Sheffield
Route 133	Essex River	Essex
Route 12	Phillips Brook	Westminster
Route 119	Willard Brook	Townsend

Appendix B: Design Public Hearings Table

Public hearings posted on the MHD web site from 4/1/2007 to 3/31/2008

City/Town	Date	Description
April 2007		
Holden	4/5/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Route 31/Wachusett Street bridge replacement project in the Town of Holden, MA
Hingham	4/19/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed West Corner Culvert replacement (Route 228 over Straits Channel) in Hull, Cohasset and Hingham, Massachusetts.
Hingham	4/25/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed project to replace-in-kind the existing cast-in-place concrete arch structure and rehabilitating the existing stone spandrel walls of the Rockland Street Bridge over Weir River in Hingham, MA.
May 2007		
Concord	5/02/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Route 62 - Main Street Footprint Road Reconstruction Project from Water Street to the Acton Town Line in Concord, MA.
Sutton	5/02/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed construction of the Tricentennial Park project in Sutton, MA.
Worcester	5/14/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed City Common enhancement project in Worcester, Massachusetts.
Falmouth	5/17/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Falmouth-Rte. 28 at Reine's Corner project in Falmouth, MA.
Pittsfield	5/17/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed reconstruction of South Street (Route 7) and Union Street project in Pittsfield, Massachusetts.
Springfield	5/22/2007	A Public Input Meeting will be held by MassHighway to discuss the proposed Streetscape, Sidewalk and Roadway Improvements in the North End and Brightwood Sections of Springfield, MA.
Quincy	5/30/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Quincy Center Concourse roadway construction project in the City of Quincy.
Salem	5/31/2007	A Design Public Hearing will be held by MassHighway in conjunction with the Division of Capital Asset Management and the City of Salem to discuss the proposed North Street Reconstruction project, in the vicinity of Bridge Street, in Salem, MA.
June 2007		
North Adams	6/5/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed Reservoir Road Improvements and Scenic Overlooks roadway reconstruction project in the City of North Adams.
Northampton	6/6/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed improvements at the intersection of Route 9, Bridge Road and the Look Park entrance in Northampton, Massachusetts.

City/Town	Date	Description
Hanover / Hanson	6/6/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed project to replace the Broadway Bridge over the Indian Head River in Hanover and Hanson, MA.
Holyoke	6/14/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed Route 141/Appleton Street bridges over First and Second Level Canals project in the City of Holyoke, MA.
Easthampton	6/27/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed project to replace the Hendrick Street Bridge over the Broad Brook in Easthampton, MA.
Templeton	6/28/2006	
July 2007		
Sturbridge / Southbridge	7/19/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed Resurfacing and Rehabilitation of Main Street (Route 131) in the Towns of Sturbridge and Southbridge, MA.
Seekonk	7/25/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed reconstruction of Route 152 (Central Avenue) and installation of a traffic signal at the Bakers Corner intersection [Central Avenue (Route 152) at Newman Avenue and Pine Street] in Seekonk, MA.
August 2007		
Royalston	8/22/2006	A Design Public Hearing will be held by MassHighway to discuss the proposed Stockwell Road Bridge over Lawrence Brook replacement project in Royalston, MA.
Transportation Building	8/28/2006	A Public Hearing will be held by MassHighway to receive comments on the proposed Approval of Access to State Highways Regulations.
September 2007		
Petersham	9/11/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Route 32/122 over the East Branch Swift River bridge superstructure replacement project in Petersham MA
Ludlow	9/17/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed East Street/Chapin Street Intersection Improvements project in Ludlow, MA.
Berkley/Dighton	9/18/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Elm Street/Center Street over the Taunton River bridge replacement project in Berkley and Dighton, MA.
Milford	9/19/2007	A Design Public Hearing will be held by MassHighway to discuss Phase 2 of the proposed Upper Charles Trail project in Milford, MA.
Tyngsborough	9/19/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Tyngsborough Bridge Rehabilitation project in Tyngsborough, MA.
Freetown/Fall River	9/26/2007	A Public Meeting will be held by MassHighway to discuss the proposed Route 24 Interchange 8-1/2 in Freetown and Fall River, MA.

City/Town	Date	Description
Fitchburg	9/27/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed roundabout and intersection improvements of Route 31 with John Fitch Highway, Mechanic Street and Rindge Road in Fitchburg, MA.
October 2007		
Northfield	10/3/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed sidewalk improvements on a section of Main Street (Route 10/63) in Northfield, MA.
Pittsfield	10/18/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed signal and intersection improvement project at Route 7 (North Street) and Route 9 (Park Square) in Pittsfield, MA.
Lynn	10/30/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed intersection improvements at Lynnfield Street, Millard and Parker Avenues, and Den Quarry Road in the City of Lynn, MA.
November 2007		
Tewksbury	11/7/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed improvements at River Road Tewksbury, MA.
Harwich	11/8/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Route 124, Pleasant Lake Avenue and Queen Anne Road intersection improvement project in Harwich, MA.
Berkshire/ Lanesborough	11/15/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Route 8 and Old State Road Intersection Reconstruction project in Lanesborough, MA.
Ashburnham	11/29/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed Lake Road over the Watatic Lake Outlet bridge superstructure replacement project in Ashburnham, MA
Lowell	11/29/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed University Avenue Bridge Replacement project over the Merrimack River in Lowell, MA.
December 2007		
Somerville	12/3/2007	The purpose of this hearing is to provide the public with the opportunity to become fully acquainted with the proposed Magoun Square Project.
Bridgewater	12/11/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed reconstruction of North Street from Pleasant Street (Route 104) to Village Gate Drive in Bridgewater, MA.
Chelmsford	12/18/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed reconstruction of Parkhurst Road in Chelmsford, MA.
Saugus/Lynn	12/14/2007	A Design Public Hearing will be held by MassHighway to discuss the proposed construction of a temporary bascule bridge carrying Route 107 over the Saugus River in Saugus and Lynn, MA.

City/Town	Date	Description
January 2008		
Fitchburg and Leominster	1/16/2008	A Public Meeting will be held by MassHighway to discuss the proposed Route 2 Improvements Project in Fitchburg and Leominster, MA.
Millville and Uxbridge	1/28/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed Blackstone River Bikeway - Segment 2 project in Millville and Uxbridge, Massachusetts.
Bridgewater / Middleborough	1/29/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed Bridge Replacement Project at Summer Street over the Taunton River in Bridgewater and Middleborough, MA.
Reading	1/30/2008	A Design Public Hearing will be held by MassHighway to discuss the Reconstruction of West Street Project in Reading, MA.
February 2008		
Haverhill	2/26/2008	A Public Information Meeting will be held by MassHighway to discuss the Replacement of Ferry Road bridge over MBTA in Haverhill, MA.
Revere/Malden/ Saugus	2/28/2008	A Public Hearing will be held by the Massachusetts Highway Department (MassHighway) to discuss the Environmental Assessment/Draft Environmental Impact Report (EA/DEIR) for the proposed transportation improvements along Route 1 in the Cities of Revere and Malden, and Town of Saugus, Massachusetts.
Royalston	2/28/2008	A Design Public Hearing will be held by MassHighway to discuss the replacement of Northeast Fitzwilliam Road bridge over Lawrence Brook, in the Town of Royalston.
March 2008		
Worcester	3/12/2008	The purpose of this hearing is to provide the public with the opportunity to become fully acquainted with the proposed Reconstruction of Route 70 (Lincoln Street) project.
Clinton	3/13/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed Water Street bridge project in the Town of Clinton, MA
Brockton	3/18/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed replacement of Bridge No. B-25-060, at Bartlett Street over Salisbury Brook in Brockton, MA.
Greenfield	3/19/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed project: Traffic Signal and Intersection Improvements at 8 Locations in Greenfield, MA.
Lakeville	3/19/2008	A Design Public Hearing will be held by MassHighway to discuss the Relocation of a portion of Rhode Island Road (Route 79) in the Town of Lakeville, MA.
Worcester	3/20/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed Blackstone Visitor Center project in Worcester, MA.
Brocton	3/26/2008	The purpose of this hearing is to provide the public with the opportunity to become fully acquainted with the proposed Replacement of the White Avenue Bridge Over Salisbury Brook project.

City/Town	Date	Description
Hatfield	3/26/2008	A Design Public Hearing will be held by MassHighway to discuss the proposed Elm Street Rehabilitation Project in Hatfield, MA.

Appendix C: MassHighway Receiving Water Body Tables