



**THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF TRANSPORTATION
MASSACHUSETTS HIGHWAY DEPARTMENT**

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SECRETARY

LUISA PAIEWONSKY
COMMISSIONER

April 30, 2009

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

RE: NPDES Phase II Small MS4 General Permit
EPA Permit Number MA043025
MassHighway Permit Year 5 Annual Report

Dear Ms. Murphy,

Please find enclosed the Permit Year 6 Annual Report, signed by Commissioner Luisa Paiewonsky. The annual report summarizes MassHighway activities between April 2008 and March 2009 towards meeting the measurable goals outlined in the NPDES Phase II Notice of Intent (NOI) submitted to your office in July 2003 with the most recent revision on December 26, 2006. Please feel free to contact Mr. Henry Barbaro, Supervisor of Wetlands & Water Resources, at (617) 973-7419 if you have any questions or require further information.

Sincerely,

Kevin Walsh
Director
Environmental Services

Enclosures: NPDES Phase II Small MS4 General Permit Annual Report – Year 6

Cc: Fred Civian
Massachusetts Department of Environmental Protection
One Winter Street - 5th Floor
Boston, MA 02108





Municipality/Organization: Massachusetts Highway Department

EPA NPDES Permit Number: MA043025

MaDEP Transmittal Number: W-040919

Annual Report Number

& Reporting Period: No. 6: April 2008-March 2009

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NPDES Phase II Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Mr. Henry Barbaro

Title: Supervisor of Wetlands & Water Resources

Telephone #: (617) 973-7419

Email: henry.barbaro@mhd.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: Luisa M. Paiewonsky

Title: MassHighway Commissioner

Date:



NPDES

Part II. Self-Assessment

MassHighway has completed the required self-assessment and continues to determine that the MS4 is in full compliance with permit conditions. On April 2, 2007, MassHighway received full authorization to discharge stormwater from MassHighway and operated MS4s in urbanized areas of Massachusetts. EPA requested that MassHighway continue to update/review its SWMP in a letter dated August 18, 2006 and October 10, 2006. MassHighway submitted a revised SWMP to address the EPA letter on January 11, 2008. MassHighway has not received any further comments from EPA regarding the revised SWMP.



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 6	Planned Activities – 2009
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.	Eleven Snow & Ice Control classes were conducted in 2008 with a total of 423 personnel in attendance. Trainings dates were September 3, 4, 15, 19, 23, 29 and October 7, 15, 17, 22, and 24. Topics covered were benefits of anti-icing, using chemical effectively, storm scenario exercises, and the environmental impact of winter operations.	Snow & Ice training with topics similar to 2008 topics.
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.	Seven Snow & Ice Training sessions were held in 2008 with a total of 395 personnel in attendance. Training dates were September 3, 17, 25 and October 1, 9, 21, 27. Topics covered were benefits of anti-icing, using chemicals effectively, storm scenario exercises, and the environmental impact of winter operations.	Snow & Ice training with topics similar to 2008 topics.
1C-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. Annual Report 5 was added and the permit authorizations from EPA and DEP.	Evaluate web page and revise as necessary. Annual Report 6 will be added to the web page.



BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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 6	Planned Activities – 2009
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) Completed in Year 5. 2) DHD contact names have been added to web site at http://www.mhd.state.ma.us/default.asp?pgid=content/mgmt_team&sid=about 3) MassHighway shared drainage outfall inventory information with Charles River Watershed Association, DCR, and Townsend.	3) MassHighway is continuing to develop an Asset Management system. Part of the system will include determining how best to share infrastructure information with the general public.
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 42 signs identifying river and stream crossings in Permit Year 6. The locations were identified by MassRiverways 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 MassRiverways Program and anticipates installing approximately 20 signs in the next 6 months.
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.	A meeting was conducted between MassHighway (Environment) and members of the Think Blue Campaign. The meeting discussed ideas about future collaborations. This effort has been delayed by the Think Blue Campaign.	MassHighway will work with the Think Blue Campaign or develop its own program. We will develop brochures with a transportation focus.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
1J	New England DOT Meetings	Environmental	Coordinate with New England DOTs to discuss on-going issues and programs being faced by the DOTs including wetland mitigation, storm water and erosion controls.	Henry Barbaro has joined the AASHTO storm water committee and communicates with other DOTs across the country through the committee. MassHighway has communicated as the need arose.	MassHighway will communicate with the other DOTs as the need develops and participate in the AASHTO storm water committee.
1K	Storm Water Coordinator	Environmental	Fund a full-time stormwater coordinator position each year.	A full-time stormwater coordinator, Robert Bennett, was hired in the Spring of 2008 and has completed many tasks under this role throughout the year.	Fund full time coordinator, increase responsibilities and outreach.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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 70 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.	MassHighway continues to support this program. Six Adopt-A-Highway signs were posted. Two on Route 495 and one each on Rts. 93, 95, 16, and 114.	MassHighway will continue to support this program. MassHighway will maintain the current level of sponsors and increase volunteer participation.
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 6	Planned Activities – 2009
2C Revised	511 Massachusetts Traveler Information System	Operations	Maintain 511 System	The 511 program received many calls during the permit year. The calls included reports of issues such as debris on the roadways.	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 1-5 are posted on the Environmental Section's web page.	Permit Year #6'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 6	Planned Activities – 2009
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 6	Planned Activities – 2009
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 Permit Year 5.	If new rest area leases are issued, they will be summarized in the 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 continued to meet internally with the Asset Management director to develop a method for inventorying 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 was completed in Permit Year 5. MassHighway has relied on requests through the web site or through District offices for Town's or other entities which request inventory related information. We have received a number of requests and have been able to respond relatively quickly.	Continue to share inventory with public and within the Department.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.) No referrals to the AG office were necessary. 4.) See Appendix C for details on letters sent to residences/businesses with potential illicit connections this permit term.	Continue to enforce provisions of drainage connection policy. The Executive Office of Transportation Legal and Environmental Services will take steps to make the Drainage Tie-In Policy a formal MassHighway SOP.
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.	Internal draft of Drainage Tie-In SOP draft was revised to reflect format of new Access Permit. Draft is finalized and being reviewed by permit engineers. Appendix D summarizes the status of drainage tie-in permits applied for and received as of 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 6	Planned Activities – 2009
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.	The IDDE RFR has not been released yet. MassHighway has been awaiting the new draft general permit from EPA to understand the illicit discharge requirements which will be included before issuing the RFR. Districts reviewed potential illicit connections. Appendix C includes more detail.	Revise RFR to include new general permit requirements for IDDE. Release RFR. Award contract and finalize IDDE protocol. Perform comprehensive dry weather review of 10% of urbanized area roads this summer. Field review complaints/ potential IDDEs identified by District personnel, during the IDDE work, 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 6	Planned Activities – 2009
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.	36 NOIs were filed during Permit Year 6. The permits are listed in Appendix H.	Continue to file NOIs for new projects which disturb more than an acre.
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.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.
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 is now included in each contract which requires a detailed Storm Water Pollution Prevention Plan (SWPPP)/ Erosion Control Plan (ECP) for all projects (except minor - such as signage, grass mowing, etc.). Having the contractor develop the SWPPP and ECP (rather than the designer) has been accepted by the Conservation Commissions and, where DEP issues a Water Quality Certificate, no objection has been raised on a project-by-project basis.	Such controls will continue to be included in construction contracts issued by MassHighway.
4G	MassHighway Research Needs Program)	Environmental/ Construction	Continue funding the MassHighway Research Needs Program.	Moved to MCM 6 since focus of research program is now for source control instead of construction	

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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 is now included in each contract which requires a detailed Storm Water Pollution Prevention Plan (SWPPP)/ Erosion Control Plan (ECP) for all projects (except minor - such as signage, grass mowing, etc.). Having the contractor develop the SWPPP and ECP (rather than the designer) has been accepted by the Conservation Commissions and, where DEP issues a Water Quality Certificate, no objection has been raised on a project-by-project basis.	Measurable goal complete.
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. Internal reviews are pending. New material as well as compost and mulch will be included.	Complete guide and internal reviews.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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. SWPPP bid item to include an Erosion Control Plan is now included in all contracts.	Continue use by Contractors on MassHighway 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 Districts 1, 3, and 5 trained 134 staff members this year. Districts 2 and 4 trainings will occur in May 2009. The trainings included a review of basic erosion control measures, diesel retrofit awareness and air quality issues, Asian long-horned beetle infestation, and hazardous waste management. Below is a list of seminar dates and # attending: District 1 2/19/09 37 District 2 to be held in May District 3 3/25/09 48 District 4 to be held in May District 5 2/11/09 49	MassHighway will continue training on topics similar to those discussed in the past. Hold District 2 and 4 training.
4L-2	Non-Traditional Erosion Control Specifications	Landscaping 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 developed two new specifications: 1) Seeded compost for slope restoration. Developed in September 2007. 2) Fiber / compost filled tubes for sediment capture in lieu of hay bales. Developed in March 2009.	Field application of these new specifications will begin as appropriate situations arise. Publication of MassHighway research on compost use.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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. This technique appears to be effective and will be included in the Field Guide. Work performed at Route 28/Dedham Westwood Roadway and Bridge is ongoing. Soil-Sement® (a type of trackifier) is being utilized for soil stabilization at bridge construction adjacent to the river.	Include fiber roll technique in the Field Guide. Develop internal memo regarding effectiveness of Soil-Sement® 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 2008. The bulletin included winter stabilization and review of permits for expiration dates.	Issue bulletin in Fall of 2009 regarding storm water issues.
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. MassHighway provided notice to contractors on two contracts that the payment would be withheld. Issue was resolved.	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 6	Planned Activities – 2009
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. During Permit Year 4, the District Construction offices were provide with the procedures to follow on discovery of any illicit discharges during construction and provided training to the REs. MassHighway determined a separate SOP was 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 currently developing training programs and soliciting for consultant contract to perform training.	Require contractors to attend half day training when SWPPP item applies to contract.

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 6	Planned Activities – 2009
5A-1	MassHighway Storm Water Handbook	Environmental	Secure DEP ratification for MassHighway Storm Water Handbook.	Measurable goal complete for original Handbook. MassHighway has been discussing revision with DEP.	MassHighway will work with DEP to secure ratification of the revised Handbook once completed.
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.	MassHighway has begun to revise Chapter 1-5 of the Stormwater Handbook to address SW Policy changes and TMDL requirements.	Reissue Handbook with changes.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.	MassHighway has begun to revise Chapter 1-5 of the Stormwater Handbook to address SW Policy changes and TMDL requirements.	Reissue Handbook with changes.
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 E.	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.	The TARP partnership is no longer in place. 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.	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 6	Planned Activities – 2009
5E	Highway Runoff Contaminant Model	Env. Div. Consultant	Develop and calibrate contaminant loading model.	A draft report was recently completed and is undergoing internal review. This report documents concentrations of selective dissolved major ions, total nitrogen and phosphorus, selective total-recoverable metals, suspended sediment, and semi-volatile compounds measured in flow-weighted composites of stormwater collected from common highway-drainage conveyance structures for eight highways in Massachusetts during a two-year monitoring period. The report discusses the relation between populations of concentration data for the respective constituents among the 12 highway-monitoring stations and to annual average daily traffic volumes. The report also presents methods used to estimate event-mean concentrations for deicing elements from continuous records of flow and specific conductance, and to calculate planning-level estimates for various constituents affiliated with suspended sediment. The data presented in this report are integrated in the Highway-Runoff Database (HRDB Version 1.0.0a) which serves as a preprocessor for the Stochastic Empirical Loading and Dilution Model (SELDLM) currently being developed for the Federal Highway Administration.	USGS will submit the draft report for review by MassHighway and others. Analyses of initial data indicate that the quality of highway runoff from the southern coastal area, including Cape Cod, was significantly different than the quality of highway runoff collected elsewhere in the state of Massachusetts. As a result, supplemental data is being collected on Interstate 195 in Marion and on Route 6 in Harwich thorough September 2009. USGS plans to issue a draft model to use this pollutant data in the summer of 2009. Once the SELDM model is issued and the highway runoff data collection is completed, MassHighway will begin to use the model to review highway runoff in critical watersheds.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.	Environmental reviewed 17 canvasses for the permit year. Two of them were denied for sale because of their value for stormwater treatment of highway runoff. Of the canvasses that resulted in a sale, stormwater treatment guidelines were provided for five parcels.	Environmental will continue to review canvasses as they are presented. The emphasis will remain on keeping parcels of land that are highly suitable for stormwater treatment (as well as wetland replication). In instances where a sale would be more beneficial, any chance to offer information or guidance on stormwater treatment will be mentioned within the commentary.
5H-1	Post Construction Runoff Enforcement-Illlicit 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. 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 C 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 MassHighway drainage system. Implement program and summarize actions taken under program in annual report.	Internal draft of Drainage Tie-In SOP draft was revised to reflect format of new Access Permit. Draft is finalized and being reviewed by permit engineers. Appendix D summarizes the status of drainage tie-in permits applied for and received as of this permit year.	Finalize Drainage Tie-In SOP. Submit to Chief Engineer for signature and issuance to Department.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
5H-3	Post Construction Runoff Enforcement- Offsite Pollution to MassHighway Drainage System	Commissioner/ Legal/ Environmental	Runoff not meeting the NPDES MS4 requirements which is reaching the MassHighway 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.	Each district reported that no offsite runoff enforcement met this requirement. District 3- Lake Nipmuc Outfall (Route 16 in Mendon): Upland runoff into MHD CBs is contributing to sand bar formation at the outfall base within the lake. MassHighway took action by improving the design of the CBs leading to the outfall. This was at the request of DEP after complaints of the sand bar from the local watershed committee.	MassHighway will continue to take action when these requirements are not met.
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.
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.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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 has offered to partner with the Lowell Regional Wastewater Utility (LRWWU) to design and implement two stormwater management areas along Route 110 in Lowell. The project would include the design of a shallow conveyance from Route 110 into an undeveloped setback areas owned by the LRWWU. A LID bio-retention system would be designed for this setback area to retain and filter stormwater from two segments of Route 110 owned by MassHighway. MassHighway offered to commit to long-term maintenance of this system including management of vegetation, removal of sediment and litter debris from curb inlets leading to the system and removal of excess surface sediment from the pretreatment forebays. MassHighway has also committed to assist in the project design and provide traffic support during project construction.	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. LRWWU has not received the 319 funding grant it applied for and the project has not moved forward.

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 6	Planned Activities – 2009
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. Approximately 70 miles were cleaned each quarter during this permit year, totaling approximately 280 miles.	MassHighway will continue to support this program.
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. See Appendix F for more information on well replacements and Salt Remediation Program (BMP 6G).	The Salt Material usage committee will be reconvened in Spring 2009. The committee will continue to review reduced salt zones and explore alternative BMPs within these areas.
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 in Permit Year 6 in the areas of Boston, Worcester, and Springfield. This service not only assists disabled motorists also reduces traffic congestion.	MassHighway will continue to provide roving service patrols or tow trucks for the next four years.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.	1) MassHighway completed The Five-Year 2009-2013 Vegetation Management Plan and posted it on the web. 2) 2009 YOP is underway, but not yet completed as of April 17, 2009. 3) 2009 YOP will be posted to the MassHighway web site within 30 days of completion 4) No Spray program occurred in 2008. Herbicide Alternatives Research has been published and posted on the web. The study looked at the use of alternatives to herbicides and the efficacy of the type of herbicides used by MassHighway on roadside vegetation. 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.	MassHighway will complete its 2009 YOP and post it on the web within 30 days of completion.
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 6	Planned Activities – 2009
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.	Fiscal Year 2008 Bicycle and Walking Budget for MassHighway: \$5,650,329. \$392,000 was used for bicycle and walking infrastructure improvements as part of the Safe Route to School Program Budget.	Fiscal Year 2009 Bicycle and Walking Budget for MassHighway: \$10,861,547. \$658,000 will be used for bicycle and walking infrastructure improvements as part of the Safe Route to School Program Budget.
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 2008. Actions on Toxics Use Reduction: - Initiated testing of vegetable-based hydraulic oil in heavy equipment/plow trucks - Initiated testing of closed-loop crankcase oil draining system - Evaluated and recommended preventative maintenance procedure for rapidly corroding hydraulic fittings due to salt exposure	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 6	Planned Activities – 2009
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 2008/2009 for 335 maintenance facility personnel. Training included discussion of the following topics: • Hazardous Waste • Hazardous Materials • Universal Waste • Asbestos • Solid Waste • Roadside Issues • Tanks • Wetlands • Recordkeeping • Inspections • Water Quality • SOPs • Emergency Response • Spill Prevention/Response • Materials Management • Stormwater Pollution Prevention • Stormwater Phase 2 • Hazardous Materials Management • Hazardous Waste Management • Universal Waste Management • Vapor Recovery System Inspection • IDDE • OWS (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 6	Planned Activities – 2009
6B-2 cont'd				District 1: On November 20, 2008, training was provided for 48 district maintenance personnel. District 2: On February 17th, 2009, trainings were provided for 58 district maintenance personnel. District 3: On October 30th, November 13th and 20th, and December 2nd, trainings were provided for 55 district maintenance personnel. District 4: On November 18th and 19th and on December 2nd, and 4th, of 2008, trainings were provided for 91 district maintenance personnel. District 5: On November 4th, 5th, and 6th, of 2008, trainings were provided for 83 district maintenance 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 300 state personnel attended. Fifteen sessions were held between October 1 st and December 1 st of 2008. Topics covered included correct use of materials, proper timing, environmental impact of materials, and reduced salt zones.	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 6.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.	Training were held throughout the year on topics as follows: • Right to Know (January) • Workzone Safety Training (March) • Attenuator Truck Training (March) • Sweeper Training (March-April) • Small Power Equipment Maintenance (April) • Chainsaw Safety (April) • Over/Under the Guardrail & Herbicide Vegetation Removal (May) • Environmental Training & Herbicide Vegetation Removal (June) • Snow & Ice Training (September) • Incident Command (year round) • Operation of Lift Truck equipment • Operation of trailer and truck mounted impact attenuators	MassHighway will provide Vector Truck training, Tree Truck training, and all refresher courses pertaining to the 2008 list.
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 E of the annual report for a 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 6	Planned Activities – 2009
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. In Permit Year 6, a draft of the updated EMS Manual was completed. An update of the Facilities Environmental Handbook was also completed.	MassHighway will continue to maintain environmental compliance at their maintenance facilities by complying with each facility's Environmental Facility Handbook. Distribute the updated EMS Manual for review by the Environmental Department. Distribute the updated Facilities Environmental Handbook.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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 has issued a contract to Cartegraph to provide Asset Management system. MassHighway has had many meetings throughout the year to discuss the inclusion of the outfall inventory into the asset management system once the contract was issued.	MassHighway will implement the Cartegraph software with the development of an implementation plan for Phase 1. Implementation plan development will include a review of MassHighway's business process requirements for asset and work management, including reviews of organizational structure, strategic business and implementation objectives, internal and external influencing factors, workflow analysis, and asset management policies, plans, processes, and procedures. Phase 1 will include the 17,000 stormwater outfalls mapped during BMP 3B-2 drainage inventory and other assets. Phase 1 will also evaluate the applicability of using Cartegraph to track Snow and Ice operations, to track permits, and for call management. After Phase I, the framework and implementation models developed will be used to expand Cartegraph implementation to other assets such as guardrail, pavement markings, drainage system mapping, and others. MassHighway will continue discussion regarding how to populate the drainage system information in the most efficient manner.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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. District 1 reported that it removed and disposed of 3,234 cubic yards (2,156 tons) of sweeping materials.	MassHighway and its contractors will continue to properly dispose of waste. District 1 anticipates that it will collect and dispose of 1,600 cubic yards of street sweepings in the next 6 months.
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 has completed year 2 of the study and has decided to not move forward with Year 3 due to the inconsistencies of the data accumulated. MassHighway's consultant is preparing a draft final report summarizing the findings.	Finalize report and include in next annual report.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.	MassHighway evaluated and reviewed the program, policies, and procedures in April and throughout the summer. MassHighway increased the use of Roadway Weather Information System (RWIS), utilized pre-wetting on all salt spreaders to reduce “bounce and scatter”, utilized a RT3 friction meter to evaluate proper timing for salt application. MassHighway continues to refine the use of anti-icing techniques.	Continue to evaluate program and implement changes as determined beneficial. Increase use of “Closed Loop Ground Speed Controller.”
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.	Funding provided through new ISA - \$475 million through June 2011. Liquid deicing was used prior to storms. There was expanded use of magnesium chloride in low-salt zones. The Andover runoff study and the Dedham-Westwood aquifer study have begun. The Public Well Supply Matrix is included in the January 2008 SWMP is included as Appendix F of this annual report to summarize the current status of each public well included in the Salt Remediation Program.	The use of liquid deicing will continue to expand. The Andover runoff study and Dedham-Westwood aquifer study will continue. Monitoring of public water supply wells will continue.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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 nine wells this year based on need. The wells were located at Moretz in Otis, Krokos in Ware; Ash, Carozza, DeSouza, Shapiro, and Vallis in Boxford; and Baessler in Topsfield. Continue sampling and analysis of private wells. Treatment systems installed at Fallon residence in Franklin, Papirio in Belchertown and Vallis in Boxford. Drainage system installed at Carozza residence in Boxford. An updated version of the Public Well Supply Matrix is included as Appendix F of this annual report to summarize the current status of each public well included in the Clean Well Initiative Program.	Continue sampling and analysis of private wells and replacement well activities.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
61	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. <i>Cont'd</i>	All Districts repaired various salt sheds throughout the state. MassHighway repaired numerous salt sheds throughout the year.	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 6	Planned Activities – 2009
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. 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.	When notified of issues with sand piles, MassHighway has purchased and used covers for them. Director has continued to improve salt management and supervision of deicing operations.	Continue to monitor existing sand piles. 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.	MassHighway continues to train personnel utilizing this SOP and works diligently each year to remind and train all snow and ice personnel on the importance of "Good Housekeeping." The Environmental group has been involved as part of the training.	We will continue to work with our personnel and hired contractors to follow all SOPs relative to salt handling, storage and proper application. We will continue to emphasize the importance of salt stewardship on the road as well as at the depot.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
6K	Equipment Improvements	Environmental	MassHighway will continue to expand the use of anti-icing as a standard tool for snow and ice control.	MassHighway increased the use of anti-icing by 15% this year. MassHighway utilized 73 tanker trucks with spray bars this season.	MassHighway has a proactive approach to snow and ice control and will increase the use of anti-icing in the future. MH intends to do this not necessarily by increasing the number of trucks utilized, rather by proper utilization of this technology.
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 (through Quixote Corporation) 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 with current contract.
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 (Quixote) and communicates every month with them	Two new systems will be added this summer.
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.	MassHighway will continue to train and work with the districts to ensure all involved in a reduce salt zone are aware of the cause and effect of de-icing chemicals. One percent of this permit year's total use of deicer was derived from alternative technologies.	We will continue to use Pre-Mix and other alternative deicers in conjunction with Reduced Salt Zones.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
60	Research	Operations	MassHighway has joined Clear Roads program and will continue to explore moving forward on other projects. Summarize research performed.	MassHighway continues to be active member in the Clear Roads program. During this permit year, 5-6 funded research projects were ongoing. They ranged from correct chemical testing protocols to effective use of anti-icing chemicals. Research on new methods of removing snow focused on becoming more efficient with snow and ice operations. This was accomplished by better application methods, correct timing of snow and ice removal, and using proper chemicals. Clear Roads has also undertaken a Cost Benefit study to evaluate the real cost of efficiency. It looks at the advantage of new technology and gives tools to justify the use of new technologies.	MassHighway will participate in the annual meeting scheduled for late July in Wisconsin.
Addn	MassHighway Research Needs Program (Previously indicated as BMP 4G but focus of research program is now for source control instead of construction)	Environmental/Construction		Contract for study on Critical Operational Factors that Affect Road Salt Usage and the Effectiveness and Efficiency of Salt Spreading Operations and Equipment has been executed and awarded. The funding is \$300,000. The initial stages of the contract have been met. Work is to continue throughout the summer. Winter operations will be scheduled to commence in December of 2009.	MassHighway will begin mapping Public Drinking Water Supply Zone II area for use in the program.

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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.	114 Categorical Exclusion (CE) checklists were completed and approved for all federally-aided projects advertised for construction by MassHighway during Permit Year 6.	Complete and approve 68 Categorical Checklists for the current federally-aided construction advertising program. Complete this checklist at 25% design stage for other project that receives federal funds.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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, impaired waters, and 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.
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 G includes the updated table with description of measures to meet TMDL recommendations. MassHighway staff members and Commissioner met 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.	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 Appendix G.	

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Planned Activities – 2009
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. MassHighway's consultant is creating a list of waterbodies with Stormwater Impaired TMDL, as recently defined by DEP as part of their Regulated Impervious Area (RIA) draft permit, that have MassHighway outfalls, according to the outfall inventory, or MassHighway road layer (if not in urbanized area).	Finalize RFR. Issue RFR and award to consultant. Develop priorities list of TMDL watersheds based on contributing areas. Receive completed USGS model by summer 2009. Once the TMDL watersheds are defined, the consultant will create specific watershed maps and review them with MassHighway staff to identify possibilities for BMP installation. The BMPs identified will be summarized in a table. BMPs will be based on the phosphorus infiltration guidance given to us by DEP at our Middlesex Turnpike meeting and as outlined in DEP's draft RIA permit.
7S	Salt Remediation Program	Environmental	Continue to provide the Salt Remediation Program with a funding level appropriate to quickly address salt related complaints.	Overall ISA 38721 Salt Remediation Program budget is \$4.75 million through June 2011.	Continue to address new and existing salt complaints.
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