MASSHIGHWAY

Mitt Romney, Governor | Kerry Healey, Lt. Governor | John Cogliano, Secretary | Luisa Paiewonsky, Commissioner

EOT
MASSACHUSETTS EXECUTIVE OFFICE OF TRANSPORTATION

April 28, 2006

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P.

Ms. Thelma Murphy
U. S. Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02114

RE: NPDES Phase II Small MS4 General Permit
MassHighway Permit Year 2 Annual Report

Dear Ms. Murphy,

Please find enclosed the Permit Year 3 Annual Report, signed by Commissioner Luisa Paiewonsky. The annual report summarizes MassHighway activities between April 2005 and March 2006 towards meeting the measurable goals outlined in the NPDES Phase II Storm Water Management Plan (SWMP) summary submitted to your office in July 2003, and subsequently revised as of February 28, 2005. 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,

Gregory H. Prendergast
Director
Environmental Services

Enclosures: NPDES PII Small MS4 General Permit Annual Report – Year 3

cc: Robert Golledge
Commissioner
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02108

Massachusetts Department of Environmental Protection (w/ original certification signature page)
Division of Watershed Management
627 Main Street
Worcester, MA 01608

Municipality/Organization: Massachusetts Highway Department

EPA NPDES Permit Number: pending

MaDEP Transmittal Number: **W-040919**

Annual Report Number
& Reporting Period: **No. 3: April 05-March 06**

NPDES Phase II Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: 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: Commissioner, Massachusetts Highway Department

Date: Apr. 26, 2006

Part II. Self-Assessment

MassHighway has completed the required self-assessment and has determined that the MS4 is in compliance with all permit conditions, except for the following provisions:

I.B.2(e)(vi) MassHighway's permit eligibility with regard to the Endangered Species Act was pending at the time of our NOI submission. Until discharges are located as part of the mapping program, MassHighway can not request review from the National Marine Fisheries Service. MassHighway is not currently aware of any discharges which are impacting federal or state-listed endangered species habitat. As discharges are identified as part of the drainage inventory they will be reviewed for compliance with the endangered species program.

I.B.2(g) MassHighway's permit eligibility with regard to the National Historic Preservation Act was pending at the time of our NOI submission. Until discharges are located as part of the mapping program, MassHighway can not request review from the State Historic Preservation Officer. MassHighway is not currently aware of any discharges which are impacting historic properties. As discharges are identified as part of the drainage inventory they will be reviewed for compliance with protection of historic properties.

MassHighway submitted a revised SWMP and NOI to EPA and DEP on March 31, 2005. A public hearing was held for multiple MS4s including MassHighway on February 17, 2006 and the public notice period was closed as of midnight that night. MassHighway has not received a letter from EPA summarizing the results of the public hearing process and advising of changes required to the SWMP. MassHighway continues to implement the plan outlined in the March 31, 2005 SWMP while awaiting coverage under the general permit. The items in Part III of this report reflect the BMPs included in the revised submittal and MassHighway's progress towards implementing the programs.

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 3	Planned Activities – Permit Year 4
1A	MassHighway Training Assistance Program (MTAP)	MTAP	Continue MTAP Program	Existing program that continues to provide training programs for MassHighway.	Continue to provide training programs.
1B	Baystate Roads	Baystate Roads	Continue Baystate Roads Program	Existing program that continues to provide training programs for MassHighway.	Continue to provide training programs.
1C-2	MassHighway Web Site	IT/ Environmental	Solicit public input and publicize storm water related initiatives using web page.	The MassHighway website 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 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 3	Planned Activities – Permit Year 4
1D-1	Storm Water Training Workshop	Environmental/ MTAP	Conduct storm water training workshop for MassHighway personnel.	MTAP held training classes on April 26th (Holyoke) and 27th (District V Taunton) to provide training on MassHighway's storm water management program. The class included an overview of the federal storm water permit, description of the SWMP, and discussion of MHD's activities to manage the design, construction and operation of its storm water management facilities in accordance with the NPDES Phase II program. MassHighway personnel responsible for the design, construction and maintenance of state roads were invited to attend. 44 people attended the workshops. MTAP conducted 10 Snow & Ice training classes for MHD/EOT personnel. 298 people attended. MTAP organized 3 "tailgate" meetings which are held at maintenance facility to discuss good housekeeping measures and proper snow and ice control. MassHighway personnel from Highway Operations, Environmental and maintenance facility staff attended the meetings. Contractors for snow and ice control were also invited.	Provide annual MTAP snow & ice training and additional "tailgate" meetings.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
1D-2	Storm Water Training Workshop	Environmental/ Baystate Roads	Conduct storm water training workshop for municipal DPW personnel.	Baystate Roads sponsored seminars for transportation department and municipal DPW personnel throughout 2005-2006. Four Seminars focused on water quality/ storm water/ good housekeeping issues. 1. Controlling Invasive Plants Seminar for MassHighway employees during Spring 2005. Four seminars were provided with 13 MassHighway employees attending: 3/23/05 – Northampton – 9 MH attendees 3/28/05 – Auburn – 1 MH attendee 4/01/05 – Salem – 2 MH attendees 4/04/05 – Fall River – 1 MH attendee 2. An EPA Storm Water Management training seminar during Spring 2005. 304 attendees included 22 MassHighway staff members. The following seminars were provided: 4/08/05 – Andover – 15 MH attendees 4/13/05 – Worcester – 0 MH attendees 4/14/05 – Holyoke – 4 MH attendees 4/25/05 – Taunton – 3 MH attendees 4/29/05 – Hyannis – 0 attendees 3. Right of Way and Environmental Permitting seminar at four locations in Fall 2005. 258 people attended including 64 MassHighway personnel. 4. Anti-icing applications seminar during the fall at four locations. 147 people attended including 3 MassHighway personnel.	Continue to provide training programs

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
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.	MassHighway has developed an Illicit Connection Prohibition Policy – prohibiting illicit discharges to the MassHighway storm water system. MassHighway is in the process of updating the Drainage Tie-In Standard Operating Procedure (SOP).	The Prohibition Policy will soon be finalized, submitted to the Chief Engineer and Commissioner and then issued to the Department in Permit Year 4. Complete the Drainage Tie-In SOP. Once the Drainage Tie-In SOP is completed, the sub-committee that prepared the SOP will begin to develop a program for working with the municipalities when an existing discharge from a MassHighway drainage system to a municipal system (or vice-versa) is identified.
1G	River and Stream Signs	Traffic Operations	Install signs identifying rivers and streams crossed by MassHighway roads.	MassHighway has installed 40 signs identifying river and stream crossings in Permit Year 3. The locations were identified by Mass Riverways Program and installed by MassHighway personnel. A list of signs installed is included in Appendix B.	MassHighway will continue to install signs in areas identified by Mass. Riverways Program.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
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 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.	MassHighway will continue to support this program.
2C	Project Clean	Project Clean	Continue to support Project Clean.	MassHighway continues to support this program. During Permit Year 3, MassHighway responded to 1,990 citizen calls regarding debris pick-up.	MassHighway will continue to support this program.
2D-1	MassHighway Web Site	IT/ Environmental	Post Storm Water Management Plan (SWMP) to web site.	Measurable goal complete. Revised SWMP/ NOI submitted to EPA and DEP in March is posted on web site.	When SWMP is again revised to address public comments summarized in EPA's letter the revised SWMP will be posted to web site within 30 days of being submitted.
2D-2	MassHighway Web Site	IT/ Environmental	Post annual reports to the web site.	Annual Report #2 (April '04 – March '05) was added to the MassHighway web site.	Permit Year #3's annual report will be posted to the Environmental Division web page for public access.

2a. Additional

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
2E	Complete AASHTO's Center for Environmental Excellence on "Strategies & Approaches to Complying with NPDES Phase II survey	Henry Barbaro	Complete survey.	Completed survey.	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 3	Planned Activities – Permit Year 4
3A	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 now a standard condition on all new MassHighway Rest Area leases.	Measurable goal complete.
3B-1	Drainage Inventory	Environmental/ Construction/ Planning/ IT Division	Develop and implement specification for securing drainage information from future construction and redevelopment projects.	A draft specification has been developed.	Finalize specification.
3B-2	Drainage Inventory	Environmental/ IT/ Districts	Map drainage discharges within urbanized areas.	Hired consultant and secured funding to complete mapping by end of permit term.	Begin mapping of outfalls from scanned plans and field inventory starting with urbanized area roads in District IV.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
3C-1	Illicit Connection Prohibition Policy	Environmental	Submit Illicit Drainage Connection Policy to Chief Engineer and Commissioner for issuance to Department.	Development of Illicit Drainage Connection Policy.	Issuance to Department.
3C-2	Drainage Tie-In Standard Operation Procedure (SOP)	Environmental	Prepare an internal draft of a revised drainage tie-in SOP. Submit to Chief Engineer.	MassHighway has begun to prepare an internal draft of a revised Drainage Tie-In SOP. The revised SOP includes language to prohibit illicit connections and discharges. The development of this SOP has been delayed by development of the Illicit Connection Policy.	Complete revised Drainage Tie-In SOP and 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.	MassHighway reviewed multiple discharges for potential illicit connections including the following: 1. **Rte 9 Framingham**: MassHighway and Town of Framingham worked together to identify the cause of a sewer discharge along Route 9. A full description of the actions taken and the outcome are included in Appendix A. *(continued on next page)*	Discuss potential locations for review with District staff. Identify 20 discharges for review and complete. This review will include Rt 28 in Yarmouth per District V direction.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
3D (cont'd)	Illicit Connection Review (continued)			2. **Route 1 Revere**: Roger Frymire notified MassHighway of suspect illicit discharges during the SWMP public hearing process. He had secured bacterial samples in December, 2004 and March, 2005 which showed significant bacterial concentrations along Route 1 in Revere. Mr. Frymire identified four problem outfalls along a short stretch of Route 1 on the south side of the road to Mill Creek just west of Rt. 16. MHD reviewed the outfalls and determined they are owned by the City of Revere. MHD notified Revere and they determined that the high bacteria concentrations in the discharges were likely the result of a large sewer break in the Fenno Street area of Revere. The DPW repaired the break immediately. 3. **Route 145 Revere**: Roger Frymire notified MassHighway of another suspect illicit discharge during the SWMP public hearing process. Again, he had secured bacterial samples in December, 2004 and March, 2005 which showed significant bacterial concentrations from the outfall under Route 145 which drains to Sales Creek at the east end of the Shaw's supermarket parking lot. MHD reviewed the outfall and determined it is owned by the City of Revere. MHD notified Revere. Revere determined that the pipes were suspect illicit discharges. The City is commencing legal action against the suspect homeowners due to lack of response for city access for inspection.	

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
4A	MassHighway Department Highway Design Manual	Environmental/ Construction/ Projects	Continue to comply with erosion and sediment control requirements indicated in manual.	Rvsd – see 4A below	Deleted
4A Rvsd	*MassHighway Department Project Development & Design Guide*	*Environmental/ Construction/ Projects*	*Continue to comply with erosion and sediment control requirements indicated in the guide.*	*MassHighway completed and published the guidebook in January 2006. As part of this update, a separate Drainage chapter, which references the MassHighway Storm Water Handbook, was prepared.*	*All MassHighway projects will continue to be designed in compliance with this manual.*
4B	MA DEP Stormwater Management Policy	Environmental/ Construction/ Projects	Continue to meet criteria in Policy for projects subject to Wetlands Protection Act (WPA).	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	Comply with general permit requirements.	MassHighway and the Contractors filed NOIs for new projects. A Special Provision/ Pay Item was included in all new construction contracts to cover the preparation of the SWPPP by the Contractor. District Environmental and Construction offices verify that the General Permit item is included when the contract is awarded. For any which have not included the item but trigger the 1 acre threshold, an Extra Work Order is processed to produce the SWPPP.	MassHighway will continue to file NOIs for new projects. Contractors will continue to prepare SWPPPs as required by the Special Provision/ Pay Item in all new construction contracts.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
4D	Other State Environmental Regulations or Policy	Environmental/ Construction/ Projects	MassHighway 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 Division 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.
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.	Such controls will continue to be included in construction contracts issued by MassHighway.
4G	MassHighway Research Needs Program	Environmental/ Construction	Continue support of the NETC research committees. Continue to pursue applicable research projects.	MassHighway continues to support this program and be an active member on two research committees: 1. Measuring Pollutant Removal Efficiencies of Stormwater Treatment Units 2. Wood Fiber Attenuation of Roadway Runoff	MassHighway will continue to support this program and remain active with research committees.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
4H	Pre-Construction Meeting Review of NPDES requirements	District Environmental Staff	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 met with Contractors subject to the CGP at the pre-construction meeting and reviewed the NPDES requirements.	MassHighway will continue to review the NPDES requirements with Contractors at the pre-construction meeting.
4I	Contract Bid Item and Special Provision for Storm Water Pollution Prevention Plans (SWPPPs)	Construction Division/ 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.	Measurable goal complete.
4J	Field Guide on Erosion Prevention and Sediment Control	Construction Division/ Chief Engineer	Prepare field guide and issue to Resident Engineers	Developed draft field guide. Reviewed by Construction staff and comments received.	Finalize field guide to incorporate construction staff comments. Circulate for management review this summer. Issue in Fall 2006. Provide training on guide during Winter 2006-2007 construction training.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
4K	Storm Water Pollution Prevention Plan (SWPPP) Template	Construction Division/ Districts	Prepare a SWPPP template for use by Contractors on MassHighway construction projects. Implement use of the template on all appropriate MassHighway projects. Once contractors begin to use the template, it may be revised if necessary to address input received internally and from agencies. Ultimately the template will be converted into a computer program.	SWPPP Guidance for Contractors complete. Continues to be revised as comments are received.	Measurable goal complete. Continue to update and explore developing electronic template.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
4L-1	Training	Construction Division	Conduct annual Erosion Prevention and Sediment Control Training for MassHighway Construction Personnel.	The Environmental and Construction Divisions conducted Erosion Prevention and Sediment Control Training for Resident Engineers and field staff during the winter of 2006. The training included review of erosion control issues which occurred most often in the past year, review of Federal and Sate wetlands/ waterways permitting programs, site controls, and issue pertaining to hazardous material storage and handling at construction sites. A total of 268 staff members attended this training. District 1 3/07/06 44 attendees District 2 2/24/06 45 attendees District 3 3/03/06 88 attendees District 4 4/06/06 46 attendees District 5 2/28/06 45 attendees	MassHighway will include training on Erosion Prevention and Sediment Control in the annual training seminars given each winter.
4L-2	Training	Bay State Roads/ Construction Division	Sponsor and conduct Erosion and Sediment Control Workshop and Vendor Exhibit.	Not completed. Request that this BMP be postponed until next permit term and replaced by BMP below. In discussing the proposed Vendor Fair with vendors and contractors, it was determined that unless these materials are on MassHighway's List of Approved Materials, the contractors (and municipalities) will not use them.	BMP deleted

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
4L-2 Rvsd	*Landscaping and Construction Unit Non-Traditional Erosion Control Specifications*	*Landscaping/ Construction Division*	*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.*	*The development of these specs will allow MH to place these materials/ products on the List of Approved Materials. Other state DOTs, notably Texas and New York, are conducting extensive field testing programs on non-traditional erosion control materials. These testing programs have progressed sufficiently such that results should be forthcoming, making this approach a viable and realistic BMP.*	*Develop specifications and work on getting placed on List of Approved Materials.*
4M	Erosion and Sediment Control Field Tests	Construction Division/ Districts/ Landscaping	Perform field tests of new erosion and sediment control materials on MassHighway projects. Create and distribute memo internally summarizing materials effectiveness and recommended use.	MassHighway is participating in a research proposal on Characterization of Compost for Erosion and Sediment Control. The project involves evaluation of leachate from compost (no biosolids) and is being conducted by UMass under the direction of MA DEP and MHD. The literature search has been completed. The lab and protocols are being set up. MassHighway also has a representative on the New England Transportation Consortium Research Committee for the project titled: "Ability of Wood Fiber Materials to Attenuate Heavy Metals Associated with Highway Runoff.	Testing will be conducted on various types of compost/wood waste to determine what, if any, leachable constituents are generated and at what levels. Complete representation on Committee. The project is scheduled to end on 5/31/06.
4N	Construction Bulletins	Construction Division	Issue annual construction bulletins to each District regarding storm water issues.	A bulletin was issued on October 15, 2005 by the Department Construction Engineer to all District Construction and Environmental Engineers. The Bulletin addressed comprehensive site inspections in anticipation of winter slow down/ shut down and applicable site stabilization issues.	Deputy Chief Engineer for Construction to issue annual construction bulletin to District Construction and Environmental Engineers.

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 3	Planned Activities – Permit Year 4
5A	MassHighway Storm Water Handbook	Environmental	Secure DEP ratification for MassHighway Storm Water Handbook.	Measurable goal complete. Ratification was received on May 7, 2004 from MA DEP.	Measurable goal complete.
5B-1	MassHighway Roadway Maintenance Program	Maintenance	Continue to implement MassHighway maintenance program.	MassHighway continues to conduct maintenance on its roadways.	MassHighway will continue to conduct maintenance on its roadways.
5B-2	MassHighway Roadway Maintenance Program	Construction/ Planning Division	Include Best Management Practices in drainage inventory database submission requirements.	MHD has begun to develop the Drainage Information Specification (BMP 3B-1) which includes securing information regarding BMPs from projects which involve drainage.	Finalize Drainage Information Specification (3B-1).
5C	Technology Acceptance and Reciprocity Partnership (TARP)	Environmental	Continue to participate in TARP program	MassHighway continues to participate in this program.	MassHighway will continue to participate in this program.
5D	Stormwater Innovative Technology Evaluators (SITEs)	Environmental	Continue to participate in SITEs Committee which evaluates innovative BMPs.	Program has become inactive.	If program begins again, MassHighway will participate.
5E	Highway Runoff Contaminant Model	Env. Div. Consultant	Develop and calibrate contaminant loading model.	Starting in September '05, the USGS has installed a storm water monitoring network across the State comprised of 10 sites. Data from these sites will be used to populate the contaminant loading model.	Two more sites will be added to the sampling network for a total of 12 sites. Sampling of runoff will continue at least until March '07.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
5F-1	BMP Maintenance Manual	Environmental/ Maintenance	Develop BMP Maintenance Manual to be used as a field guide by maintenance personnel.	MassHighway has begun to solicit input from district maintenance staff on the format and contents of the manual.	MassHighway will continue to develop the maintenance manual.
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 a methodology for evaluating candidate parcels for their storm water management potential.	Implement program to evaluate parcels.
5H (new)	*Route 128 project storm water improvements*	*Planning Division*	*Incorporate significant storm water improvements into the redevelopment project.*	*Incorporated significant stormwater improvements into the design especially along the Roadway 1 and Bridge I sections of the project.*	*Design complete. Begin installation.*

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 3	Planned Activities – Permit Year 4
6A-1	Source Control	Project Clean/ Operations	Continue to support Project Clean.	MassHighway continues to support this program.	MassHighway will continue to support this program.
6A-2	Source Control	Adopt-a-Highway/ Operations	Continue to support Adopt-a-Highway program.	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 3	Planned Activities – Permit Year 4
6A-3	Source Control	Environmental/ Districts	Continue to support Deicing and Reduced Salt Areas Programs.	MassHighway continues to support these programs. MassHighway submitted the Draft GEIR for deicing practices for review in June 2004. Comments were received and a final report will be submitted in May 2006.	MassHighway will continue to support the Deicing and Reduced Salt Areas Programs. Submit GEIR in May 2006.
6A-4	Source Control	HELP/ Operations	Continue to support Highway Emergency Locator Program (HELP).	MassHighway continues to support this program.	MassHighway will continue to support this program.
6A-5	Source Control	Environmental	Continue development of Vegetation Management Plan (VMP)	Measurable goal complete.	Measurable goal complete.
6A-6	Source Control	Planning	Continue to support MassHighway HOV program.	MassHighway continues to support this program	MassHighway will continue to support this program.
6A-7	Source Control	Planning	Continue to support alternative transportation through technical funding and assistance.	MassHighway continues to support this program.	MassHighway will continue to support this program.
6A-8	Source Control	Highway Design	Continue to support highway safety through safety design standards, hazard signage and electronic variable message signs, and rumble strips.	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 3	Planned Activities – Permit Year 4
6A-9	Source Control	Environmental	Continue support of Toxics Use Reduction (TURA) program.	MassHighway continues to support this program.	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 1A and 1B.	MassHighway will continue to support these programs.
6B-2	Employee Training	Environmental	Continue Facility Handbook Training	MassHighway provided annual "Environmental Awareness Training" to maintenance facility personnel regarding spill prevention and good housekeeping practices (e.g., proper storage and handling of materials, O&M of drainage systems, and snow and ice control). The topics included hazardous waste, universal waste, hazardous materials, asbestos containing materials, solid waste, roadside issues, tanks, water quality (which includes storm water), wetlands, recordkeeping, and inspections. These trainings were conducted in Fall 2005. A total of 347 MassHighway employees attended including the following from each district District 1 = 35 attendees District 2 = 50 attendees District 3 = 52 attendees District 4 = 114 attendees District 5 = 96 attendees	MassHighway will again provide annual training to maintenance facility personnel regarding good housekeeping practices and spill prevention in Permit Year 4.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
6B-3	Employee Training	Highway Operations/ MTAP/ Baystate Roads	Continue Snow and Ice Program Training.	MTAP conducted 10 Snow & Ice training classes for 298 MHD/EOT personnel.	MassHighway will again provide annual training internally and through MTAP programs on the latest techniques, equipment and material available for snow and ice removal.
6C-1	Maintenance	Districts	Continue maintenance activities for storm water system.	MassHighway continued to maintain the highway system through catch basin cleaning contracts, street sweeping and regular drainage system maintenance.	MassHighway will continue to maintain the highway system through catch basin cleaning contracts, street sweeping and regular drainage system maintenance
6C-2	Maintenance	Districts	Continue maintenance activities and practices discussed in Environmental Facility Handbooks for maintenance/ material storage yards.	MassHighway continues to maintain environmental compliance at their maintenance facilities by employing MassHighway's EMS system and in accordance with each facility's Environmental Facility Handbook.	MassHighway will continue to maintain environmental compliance at their maintenance facilities by complying with each facility's Environmental Facility Handbook.
6D	Waste Disposal	Districts	Continue proper waste disposal practices.	MassHighway and its contractors continue to properly dispose of 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 3	Planned Activities – Permit Year 4
6E-1	Good Housekeeping/ Pollution Prevention Program Evaluation	Environmental	Evaluate existing Good Housekeeping/ Pollution Prevention Programs to determine additional or revised activities which would increase effectiveness and usefulness of the programs. Year 1: Training Programs (MTAP, Baystate Roads, Facility Handbook, Snow and Ice Program, and Equipment and Vehicle Safety)	**MTAP** – Provided a seminar on the Storm Water Handbook and NPDES SWMP (BMP 1D-1). **Baystate Roads** – Measurable goal complete. **Facility Handbook** – Annual training seminar will continue as discussed in BMP 6B-2. **Snow and Ice Program** – Annual training as discussed in BMP 6B-3.	**MTAP** – Measurable goal complete. Continue to evaluate stormwater seminars MTAP could provide. **Baystate Roads** – Measurable goal complete. **Facility Handbook** – Measurable goal complete. **Snow and Ice Program** – Measurable goal complete.
6E-2	Good Housekeeping/ Pollution Prevention Program Evaluation	Environmental	Evaluate Source Control Programs - litter and chemical use reduction (Project Clean, Adopt-a-Highway, Deicing and Reduced Salt Areas, VMP, Toxics Use Reduction) to determine additional or revised activities which would increase effectiveness and usefulness of the programs in regards to storm water and good housekeeping measures.	Measurable goal complete.	Measurable goal complete.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
6E-3	Good Housekeeping/ Pollution Prevention Program Evaluation	Environmental	Evaluate Source Control Programs – vehicle use reduction and accident prevention (MassTransit, Alternative Transportation, Highway Safety)	**MassTransit** - The new MassHighway Project Development and Design Guide (2006) Chapter 12 addresses Intermodal Facilities and Rest Areas which includes measures for addressing masstransit activities at MassHighway rest areas and facilities. The chapter also addresses the design considerations associated with transit centers. **Alternative Transportation** – The new MassHighway Project Development and Design Guide (2006) enforces the principles of multimodal accommodation by considering all users equally throughout all phases of a project so that even the most vulnerable (e.g., children and the elderly) can feel safe within the public right-of-way. **Highway Safety:** ***Hazard Signage/Information*** – MassHighway follows strict standards for signage and traffic control in construction work zones to help improve worker safety and to warn motorists of potential hazards and variable travel conditions. ***Other Physical Safety Measures*** (he changed the title from "rumble strips") – MassHighway policy requires rumble strips, raised pavement markers, and wide pavement marking lines to help combat driver fatigue and to enhance safety. These types of evolving safety technologies are routinely employed by MassHighway as they are developed. They have all helped to reduce the number and severity of crashes on roadways in Massachusetts.	Measurable goal complete.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3	Planned Activities – Permit Year 4
6E-4	Good Housekeeping/ Pollution Prevention Program Evaluation	Environmental	Evaluate Maintenance Programs	No activity required	Evaluate programs to determine if additional storm water BMPs can be integrated.
6F	Catch Basin Inspection and Maintenance Frequency Review Program	Environmental/ Maintenance/ Districts	Collect data for three years on the accumulation of debris for representative areas, and determine if the current inspection and cleaning schedule should be altered for particular areas. The schedule will target areas that are in greatest need of cleaning.	MassHighway has developed a work plan for this study. Due to MassHighway's focus on revising the SWMP to address EPA and DEP comments during Permit Year 2 and 3, implementation of the catch basin monitoring program was not started. The implementation of the catch basin accumulation study will begin in Permit Year 4 and continue for 3 years.	MassHighway will implement the data collection program and begin monitoring.

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 3	Planned Activities – Permit Year 4
7D	Environmental Site Data Form	Environmental/ Construction	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.	The information needed to complete the SWPPP overlaps with the environmental impact information that MassHighway envisioned would be included in the Site Data Form. Therefore, completion of this form was delayed in order to explore ways of coordinating completion of these two forms or creating one form that would be submitted at the 25% Design Stage.	Anticipate draft of Environmental Site Data Form template/ guidance portion for fall.
	See attached table with description of measures to meet TMDL recommendations.				

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

MassHighway did not implement any programs which collect or analyze information during Permit Year 3.

Part V. Program Outputs & Accomplishments (OPTIONAL)

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

Appendix A: Route 9 Framingham Illicit Discharge

Route 9 Framingham Illicit Discharge Review

Day 1 (Thursday, September 8, 2005):

An illicit discharge and/ or sewage leak was discovered during a site visit to a proposed bridge project on Route 9 in Framingham. Photos were taken and a preliminary assessment of discharge and source was made. This information was given to the District Projects Development Engineer and Bridge Engineer.

District bridge personnel inspected the site and verified that the presence of raw sewage flowing from a MassHighway outfall into the Sudbury River and notified the Town Board of Health and Sewer Department.

Day 2 (Friday, September 9, 2005):

Copies of the photos taken, plans for the bridge project were forwarded to:
DEP – Richard Chretien, Richard Tomczyk
MassHighway – Projects Development Engineer, District Environmental Engineer, Bridge Engineer, Project Manager, Deputy Director of Environmental

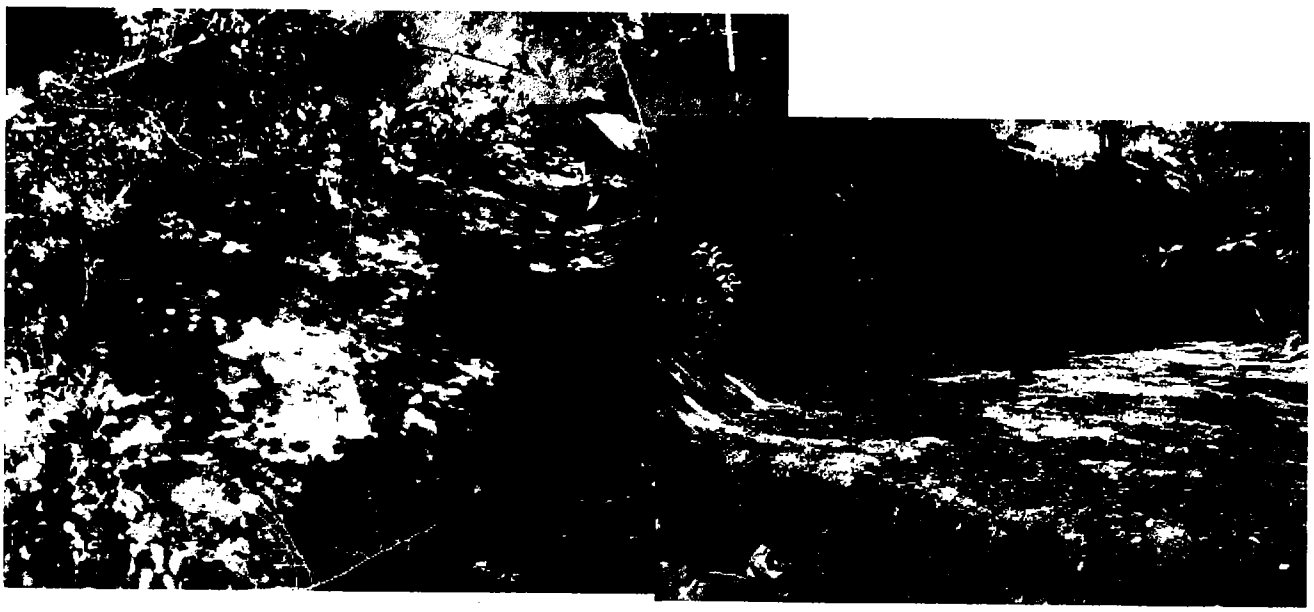
Day 5: (Monday, September 12, 2005):

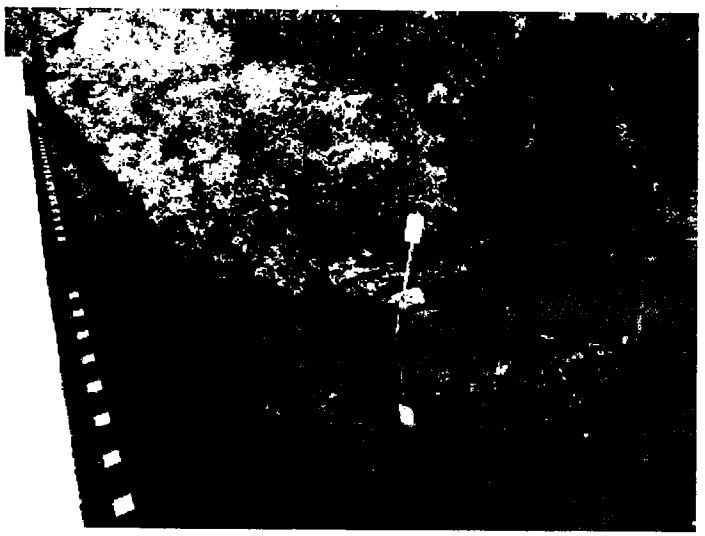
The DEE spoke with Joe Dorant (Environmental Engineer/Environmental Strike Force) from DEP, who had been in touch with the Framingham Board of Health Director, Bob Cooper. MassHighway will provide traffic control equipment and a crew to assist in opening manholes along the drainage system to zero in on the location of the sewage source. Since some of the manholes are within the narrow median, some form of traffic control will be required.

The Board of Health, Sewer Department and Joe Dorant met with Phil Hurton (Area B Foreman) in the afternoon on site to open some of the manholes and to determine which additional manholes need to be opened and to schedule the soonest possible time to do the work. Phil determined the necessary traffic control equipment and manpower to assist the Town.

Day 6 (Tuesday, September 13, 2005):
Continuing to work with the Board of Health, Sewer Department and DEP, the MassHighway maintenance crew set up traffic controls and continued to open manholes to narrow down the location of the sewage infiltration. The break was located on a side road, where the sewer line passed very close to an isolated section of the Town's drainage system, which had been tied in to MassHighway's storm drain system. Since the break was located on a side road, further traffic controls weren't needed. The Town Sewer Department assumed responsibility for repairing the damaged pipe. The Town crew worked on it all day and completed the repairs in the wee hours of Wednesday, September 14th, at approximately 4:00 am.

Day 7 (Wednesday, September 14, 2005):
Town Sewer Department went back and vacuumed out the drain lines.





Appendix B: River and Stream Signs Installed in Permit Year 3

River and Stream Crossing Signs Installed by MassHighway during Permit Year 3

Road	River	Town
Interstate 290 bridge	Middle River	Worcester
Interstate 495 bridge, just north of the Hopkinton town line	Sudbury River	Westborough
Interstate 93 bridge	Mystic River	Medford
Interstate 95 bridge	Ten Mile River	Attleboro
Route 10 bridge	Mill River Diversion	Northampton
Route 10/202 bridge	Powdermill Brook	Westfield
Route 10/202 bridge	Westfield River	Westfield
Route 111 bridge	Fort Pond Brook	Acton
Route 117 bridge	Elizabeth Brook	Stow
Route 117 bridge	Great Brook	Bolton
Route 122A bridge	Blackstone River	Fisherville section of Grafton
Route 169 bridge	Quinebaug River	Southbridge
Route 2 (two bridges)	Monoosnoc Brook	Leominster
Route 23 bridge crossing	Potash Brook	Russell
Route 2A/119 bridge, just east of the intersection with Route 27	Nashoba Brook	Acton
Route 3 bridge	Jones River	Kingston
Route 3A bridge	Neponset River	Quincy/Boston
Route 3A bridge	Weir River	Hingham
Route 8 bridge	East Branch, Housatonic River	Hinsdale
Route 8 bridge	North Branch Hoosic River	Clarksburg
Route 8 bridge	North Branch Hoosic River	North Adams
Route 8A bridge, about ¼ mile south of the Charlemont line	Chickley River	Hawley
Route 9 bridge	East Brookfield River	East Brookfield
Route 9 bridge	Mill River	Williamsburg
Route 9 bridge	Sudbury River	Framingham
Route 9 (two crossings)	West Branch Mill River	Williamsburg
Routes 1A/133 bridge	Ipswich River	Ipswich
Routes 23/41 bridge	Green River	Great Barrington
Routes 75 and 147 bridge	Westfield River	Agawam/W. Springfield line
Routes 8A and 9 (two bridges)	Waconah Falls Brook	Dalton
Routes US 202 and MA 10 bridge	Little River	Westfield
U.S. 20 bridge	Blackstone River	Millbury
U.S. 20 bridge	Walker Brook	Chester
U.S. 20 (three bridge crossings)	Walker Brook	Becket
U.S. 7 bridge	West Branch, Housatonic River	Pittsfield

Appendix C: TMDL Review Table

Summary of MA TMDL Reports and Recommendations Which Pertain to MassHighway

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
Cape Cod	Frost Fish Creek	Bacteria	Yes	Yes	The Massachusetts Highway Department should determine the Route 28 roadway drainage discharging to Muddy Creek and install best management structures and/or operational practices to the maximum extent practicable with a goal of meeting the water quality standard for bacteria in SA waters. Given this is a waterway with an approved TMDL, the MHD must meet the requirements of EPA's NPDES General Permit for Stormwater Discharges from small MS4s (Phase II), Part i D(1-4), as it pertains to approved TMDLs." MassDEP has not deferred to the Route 28 reconstruction project since we do not have any information about the extent or the time schedule for it. MassDEP also suggests that the MassHighway Dept. work with the Town of Chatham to work out a reasonable schedule for these activities.	As part of the next Route 28 reconstruction project, the Massachusetts Highway Department will work with the Town to mitigate the Route 28 roadway drainage in the immediate area by installing practicable best management structures, or operational practices, as warranted by the magnitude of contaminant loading to Frost Fish Creek.
Cape Cod	Muddy Creek	Bacteria	Yes	Yes	The Massachusetts Highway Department should determine the Route 28 roadway drainage discharging to Muddy Creek and install best management structures and/or operational practices to the maximum extent practicable with a goal of meeting the water quality standard for bacteria in SA waters. Given this is a waterway with an approved TMDL, the MHD must meet the requirements of EPA's NPDES General Permit for Stormwater Discharges from small MS4s (Phase II), Part i D(1-4), as it pertains to approved TMDLs." MassDEP has not deferred to the Route 28 reconstruction project since we do not have any information about the extent or the time schedule for it. MassDEP also suggests that the MassHighway Dept. work with the Town of Chatham to work out a reasonable schedule for these activities.	As part of the next Route 28 reconstruction project, the Massachusetts Highway Department will determine the Route 28 roadway drainage area discharging to Muddy Creek and install practicable best management structures, or operational practices, as warranted by the magnitude of contaminant loading to Muddy Creek.
Chicopee Basin	Browning Pond, Oakham Long Pond, Springfield Sugden Reservoir, Spencer Mona Lake, Springfield	Phosphorus	Yes	No	--	--
	Minechoag Pond, Ludlow Spectacle Pond, Wilbraham Wickaboag Pond, West Brookfield	Phosphorus	Yes	Yes	TMDL suggests MassHighway and MassTurnpike should regulate road sanding, salting, regular sweeping, and installation of BMPs for these three ponds.	MassHighway regulates road sanding and salting through its Snow and Ice Program and the procedures approved in the GEIR. Roads are swept on an annual basis after winter deicing applications. MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.

Summary of MA TMDL Reports and Recommendations Which Pertain to MassHighway

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
Connecticut Basin	Aldrich Lake East, Granby Aldrich Lake West, Granby Leverett Pond, Leverett Lake Wyola, Shutesbury	Phosphorus	Yes	No	--	--
	Loon Pond, Springfield Lake Warner, Hadley	Phosphorus	Yes	Yes	TMDL suggests MassHighway, MassTurnpike, and towns should develop Storm Water Management Plans for Phase II NPDES and initiate additional BMPs in critical areas. MassHighway and MassTurnpike should regulate road sanding, salting, regular sweeping, and installation of BMPs for these two ponds.	MassHighway has submitted their Storm Water Management Plan (SWMP) for compliance with NPDES Phase II and is awaiting coverage under the permit. MassHighway regulates road sanding and salting through its Snow and Ice Program and the procedures approved in the GEIR. Roads are swept on an annual basis after winter deicing applications. MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.
French Basin	Buffumville Lake, Charlton Cedar Meadow Pond, Leicester Dresser Hill Pond, Charlton Dutton Pond, Leicester Gore Pond, Charlton/Dudley Granite Reservoir, Charlton Greenville Pond, Leicester Hudson Pond, Oxford Jones Pond, Charlton/Spencer Larner Pond, Dudley Lowes Pond, Oxford McKinstry Pond, Oxford Mosquito (Tobins) Pond, Dudley New Pond, Dudley Peter Pond, Dudley Pierpoint Meadow Pond, Dudley/Charlton Pikes Pond, Charlton Robinson Pond, Oxford Rochdale Pond, Leicester Shepherd Pond, Dudley Texas Pond, Oxford Wallis Pond, Dudley	Phosphorus	Yes	Yes	TMDL suggests: 1. MassHighway conduct loading study and develop methodology to calculate loadings from highways.	USGS is currently performing a loading study for MassHighway.
					2. MassHighway, MassPike, and local towns should initiate twice yearly sweeping and catch basin inspection and cleaning program along MassHighway I-395, MassPike I-90 and other roadways.	MassHighway has proposed a catchbasin inspection and maintenance record system in its SWMP (BMP 6F). MassHighway has very limited maintenance budgets and staff, therefore we feel that the cost-effectiveness, and necessity of cleaning catch basins twice per year should be closely evaluated rather than arbitrarily set. Consequently, MH has included the following program: 1. Collect data for representative areas. Determine if the current inspection and cleaning schedule should be altered for particular areas. 2. Upon completion of the review, update Catch Basin Cleaning SOP, if necessary. 3. Implement SOP. 4. Once drainage inventory is created for an area, add future catch basin cleaning information.
					3. MS4s should install additional BMPs as needed to address pollutant loadings identified above.	MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.

Summary of MA TMDL Reports and Recommendations Which Pertain to MassHighway

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
French Basin (cont'd)	Cedar Meadow Pond, Leicester Dresser Hill Pond, Charlton Gore Pond, Charlton/Dudley	Phosphorus	Yes	Yes	4. MassHighway, MassPike and the towns of Charlton, Leicester and Oxford should prepare Storm Water Management Plans for Phase II. (specific to these impaired waterbodies)	MassHighway has submitted their Storm Water Management Plan (SWMP) for compliance with NPDES Phase II and is awaiting coverage under the permit.
	Granite Reservoir, Charlton Hudson Pond, Oxford Jones Pond, Charlton/Spencer Larner Pond, Dudley New Pond, Dudley Peter Pond, Dudley Robinson Pond, Oxford Shepherd Pond, Dudley Mosquito (Tobins) Pond, Dudley Wallis Pond, Dudley				5. MassHighway and MassTurnpike should regulate road sanding, salting, regular sweeping, and installation of BMPs (specific to these impaired waterbodies).	MassHighway regulates road sanding and salting through its Snow and Ice Program and the procedures approved in the GEIR. Roads are swept on an annual basis after winter deicing applications. MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.
Indian Lake	Indian Lake, Worcester	Phosphorus	Yes	Yes	TMDL suggests that MassHighway and town or city Dept. Public Works should reduce impervious surfaces, institute increased street sweeping and catch basin cleaning; install detention basins, etc.	MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.
					It was noted at the public meeting that MassHighways will be required to comply with a new Phase II Stormwater discharge permit. In addition, the Regional DEP office in Worcester has submitted a written request to the Regional office of MassHighway to give the roads in the Mill Brook drainage area (including parts of Indian Lake Watershed) priority for increased Best Management Practices such as sweeping and catchbasin cleaning.	see above
Lake Boon (Boons Pond)	Lake Boon, Hudson/ Stow	Phosphorus	Yes	No	--	--
Lake Quinsigamond and Flint Pond	Flint Pond, Grafton/Worcester/ Shrewsbury Lake Quinsigamond, Worcester/ Shrewsbury	Phosphorus	Yes	Yes	1. MassHighways should begin the Storm Water Management Plans required under Phase II to reduce discharge of pollutants to the "maximum extent practicable".	USGS is currently performing a loading study for MassHighway. The loading study is scheduled to be completed by the end of the permit term (2008).
					2. MassHighway will also be required to apply for the EPA Phase II General Stormwater NPDES Permit by March 10 of 2003.	MassHighway has submitted their Storm Water Management Plan (SWMP) for compliance with NPDES Phase II and is awaiting coverage under the permit.
					3. The regional office of MassHighway has offered to target high priority watersheds in the region of higher frequency of BMPs and maintenance.	MassHighway District 3 will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue.

Summary of MA TMDL Reports and Recommendations Which Pertain to MassHighway

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
Lake Quinsigamond and Flint Pond (cont'd)					4. Visually inspect the roads monthly and sweep as needed. At a minimum, roads must be swept at least twice a year as soon after snowmelt as possible or by April 1st of each year and again in the fall.	MassHighway has proposed a catchbasin inspection and maintenance record system in its SWMP (BMP 6F). MassHighway has very limited maintenance budgets and staff, therefore we feel that the cost-effectiveness, and necessity of cleaning catch basins twice per year should be closely evaluated rather than arbitrarily set. Consequently, MH has included the following program: 1. Collect data for representative areas. Determine if the current inspection and cleaning schedule should be altered for particular areas. 2. Upon completion of the review, update Catch Basin Cleaning SOP, if necessary. 3. Implement SOP. 4. Once drainage inventory is created for an area, add future catch basin cleaning information.
					5. Inspect catch basins at least twice a year and any other settling or detention basins once a year to measure depth of solids. If solids are one half or more of design volume for solids, then completely remove all solids.	See response above (#4) regarding CBs. Each District is responsible for monitoring BMPs and cleaning as determined necessary.
					6. Inspect and maintain all structural components of stormwater system on a yearly basis.	Each District is responsible for monitoring BMPs and cleaning as determined necessary.
					7. Develop methodology to calculate loadings from highways.	USGS is currently performing a loading study for MassHighway.
					8. Conduct pilot project to assess loadings and test BMPs on highways	USGS is currently performing a loading study for MassHighway.
					9. Initiate twice yearly sweeping and catch basin inspection and cleaning program along I-290 and other roadways. Install additional BMPs as needed to address pollutant loadings identified above.	See response above (#4) regarding CBs. MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue.
Leesville Pond	Leesville Pond, Auburn/ Worcester	Phosphorus	Yes	Yes	TMDL suggests that: 1. MassHighway should conduct loading study and develop methodology to calculate loadings from highways.	USGS is currently performing a loading study for MassHighway. The loading study is scheduled to be completed by the end of the permit term.
					2. MassHighway, MassPike, and towns of Auburn, Leicester, Paxton, and Millbury and City of Worcester should initiate twice yearly sweeping and catch basin inspection and cleaning program along I-290 and other roadways and install additional BMPs as needed to address pollutants loadings identified above.	MassHighway regulates road sanding and salting through its Snow and Ice Program and the procedures approved in the GEIR. Roads are swept on an annual basis after winter deicing applications. MassHighway has proposed a catchbasin inspection and maintenance record system in its SWMP (BMP 6F). MassHighway has very limited maintenance budgets and staff, therefore we feel that the cost-effectiveness, and necessity of cleaning catch basins twice per year should be closely evaluated rather than arbitrarily set. Consequently, MH has included the following program: 1. Collect data for representative areas. Determine if the current inspection and cleaning schedule should be altered for particular areas. 2. Upon completion of the review, update Catch Basin Cleaning 3. Implement SOP.

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
Leesville Pond (cont'd)						4. Once drainage inventory is created for an area, add future catch basin cleaning information.
					3. MassHighway, MassPike and towns of Auburn, Leicester, Paxton, and Millbury should prepare Storm Water Management Plan for Phase II.	MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.
					4. MassHighway, MassPike, and town or city Dept of Public Works should reduce impervious surfaces, institute street sweeping program, catch basin cleaning, install detention basin etc.	see above measures
Miller River Basin	Bents Pond Bourn-Hadley Pond Brazell Pond Lake Ellis Greenwood Pond Lake Monomonac Ramsdall Pond Reservoir No. 1 Wallace Pond Whitney Pond	Phosphorus	Yes	Yes	TMDL suggests that MassHighway and MassTurnpike should better manage road sanding, salting, regular sweeping, and installation of BMPs (specific to these impaired waterbodies).	MassHighway has proposed a catchbasin inspection and maintenance record system in its SWMP (BMP 6F). MassHighway has very limited maintenance budgets and staff, therefore we feel that the cost-effectiveness, and necessity of cleaning catch basins twice per year should be closely evaluated rather than arbitrarily set. Consequently, MH has included the following program: 1. Collect data for representative areas. Determine if the current inspection and cleaning schedule should be altered for particular areas. 2. Upon completion of the review, update Catch Basin Cleaning SOP, if necessary. 3. Implement SOP. 4. Once drainage inventory is created for an area, add future catch basin cleaning information.
	Beaver Flowage Pond Cowee Pond Davenport Pond Lake Denison Depot Pond Hilchey Pond Lower Naukeag Lake Minott Pond South Minott Pond Parker Pond Reservoir No. 2 Riceville Pond South Athol Pond Stoddard Pond Ward Pond Whites Mill Pond Wrights Reservoir	Phosphorus	Yes	No	--	--

Summary of MA TMDL Reports and Recommendations Which Pertain to MassHighway

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
Neponset River Basin	Beaver Meadow Brook East Branch, Outlet Forge Pond Germany Brook Gulliver Creek Hawes Brook Massapoag Brook Mill Brook Mine Brook Mother Brook Neponset River Pequid Brook Pine Tree Brook Ponkapoag Brook Purgatory Brook School Meadow Brook Traphole Brook Unquity Brook	Bacteria	No	Yes	Regulated municipalities should prepare Storm Water Management Plans for Phase II.	MassHighway has submitted their Storm Water Management Plan (SWMP) for compliance with NPDES Phase II and is awaiting coverage under the permit.
Northern Blackstone	Auburn Pond, Auburn Curtis Pond North, Worcester Curtis Pond South, Worcester Dorothy Pond, Millbury Eddy Pond, Auburn Pondville Pond, Auburn Smiths Pond, Leicester Southwick Pond, Leicester Stoneville Pond, Auburn	Phosphorus	Yes	Yes	TMDL suggests that MassHighway and MassTurnpike should regulate road sanding, salting, regular sweeping, and installation of BMPs (for these impaired waterbodies).	MassHighway regulates road sanding and salting through its Snow and Ice Program and the procedures approved in the GEIR. Roads are swept on an annual basis after winter deicing applications. MassHighway will review projects within this watershed for opportunities to include additional BMPs within proposed projects if MassHighway determines they will help address the pollutant loading issue. MassHighway believes that the most cost-effective approach to improving stormwater quality is to focus on source control measures, rather than end-of-pipe BMPs. Two important examples include reducing winter road sand application rates, and stabilizing shoulder areas that erode onto road surfaces. Source reduction measures are described in this NPDES Stormwater Management Plan.
	Brierly Pond, Millbury Green Hill Pond, Worcester Howe Reservoir, Millbury Jordan Pond, Shrewsbury Mill Pond, Shrewsbury Newton Pond, Shrewsbury Shirley Street Pond, Shrewsbury	Phosphorus	Yes	No	--	--

Summary of MA TMDL Reports and Recommendations Which Pertain to MassHighway

Overall Basin	Specific Waterbodies	Pollutant of Concern	Does TMDL include a WLA?	Does the TMDL include BMP recommendations or performance requirement regarding MassHighway?	If yes, what are the recommendations?	How is MassHighway currently meeting these recommendations or how does MassHighway plan to meet them in the future?
Salisbury Pond	Salisbury Pond, Worcester	Phosphorus	Yes	Yes	TMDL indicates that:	
					1. MassHighway should develop methodology to calculate loadings from highways and conduct pilot projects to assess loadings and test BMPs on highways.	USGS is currently performing a loading study for MassHighway. The loading study is scheduled to be completed by the end of the permit term.
					2. MassHighway and town or city Dept. Public Works should reduce impervious surfaces, institute more frequent street sweeping and catch basin cleaning, install detention basins, dredge and maintain storm water detention basins, etc.	MassHighway has committed to DEP in its January 23, 2002 letter that streets will be swept at least once a year (usually in spring) and more often if necessary. All sumped drainage structure will be inspected and cleaned, if necessary, twice a year and more often if necessary. MassHighway will inspect/ clean drainage outlet locations where sediment build-up is evident. MassHighway will inspect and repair damaged and/ or clogged drainage conveyances.
					3. MassHighway will also be required to apply for the EPA Phase II General Stormwater NPDES Permit by March 10 of 2003.	MassHighway applied for coverage under the general permit and has been working with EPA to revise the SWMP since to meet the regulations.
Shawsheen River Basin	Shawsheen River	Bacteria	Yes	No	--	
		Stormwater	Yes	No	--	
Little Harbor	Little Harbor, Cohassett	Fecal Coliform	No	--	--	
Assabet River	Assabet River	Phosphorus	Yes	No	--	--
Chatham - Stage Harbor	Oyster Pond	Total Nitrogen	Yes	No	--	--
	Oyster Pond River					
	Stage Harbor					
	Mill Pond					
Chatham - Sulphur Springs	Harding Beach Pond					
	Bucks Creek					
Chatham - Taylors Pond	Taylors Pond					
Chatham - Bassing Harbor	Crows Pond					
	Ryder Cove					
	Frost Fish Creek					
Chatham - Muddy Creek	Muddy Creek					
	Peters River					